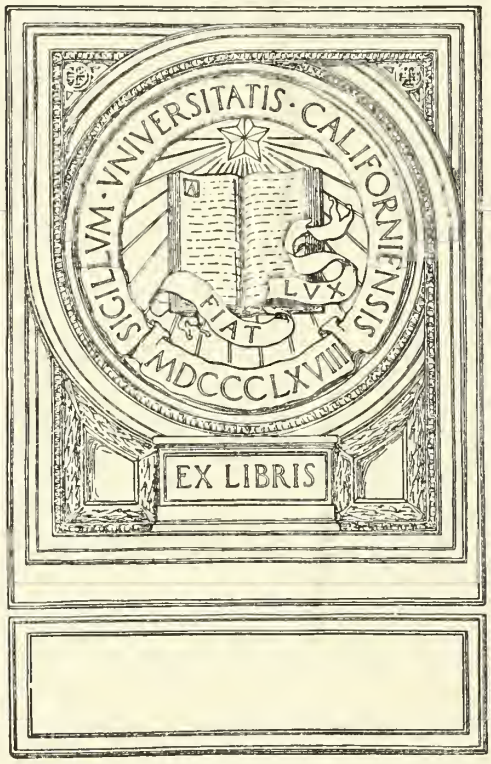
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Journal of ARIZONA MEDICAL ASSOCIATION

VOL. 11, NO. 1 JANUARY, 1954

TABLE OF CONTENTS

OFFICERS

ARIZONA MEDICAL DIRECTORY VI
WOMAN'S AUXILIARY DIRECTORY VI

ORIGINAL ARTICLES

THE NEPHROTIC SYNDROME (CONCLUSION) 1
Derrill B. Manley. M.D., Phoenix, Arizona
CANCER OF THE STOMACH 5
Lewis W. Guiss. M.D., Los Angeles, California
SURGICAL TREATMENT OF SUBARACHNOID HEMORRHAGE DUE TO INTRACRANIAL VASCULAR LESIONS 9
Harry F. Steelman, M.D., Phoenix, Arizona

MEDICAL PROBLEMS

PHOENIX CLINICAL CLUB 11
Ben P. Frissell, M.D., Phoenix, Arizona and Philip E. Rice, M.D., Glendale, Arizona

PRESIDENT'S PAGE

HEALTH INSURANCE COVERAGE 20
Edward M. Hayden, M.D., Tucson, Arizona, President, Arizona Medical Association, Inc.

EDITORIAL

ARE YOU GUILTY? 21

TOPICS OF CURRENT MEDICAL INTEREST

RX., DX., AND DRS. 26
Guillermo Osler, M. D.
LETTER TO THE EDITOR 22
Lloyd K. Swasey, M.D., Phoenix, Arizona
AMERICAN COLLEGE OF CHEST PHYSICIANS 23
A ONE-ACT PLAY 24
Arizona Pharmaceutical Page
DELEGATES REPORT, AMERICAN MEDICAL ASSOCIATION 29
Jesse D. Hamer, M.D., Phoenix, Arizona
REPORT ON THE SIXTH ANNUAL PUBLIC RELATIONS CONFERENCE 32
Robert Carpenter, Executive Secretary, Arizona Medical Association, Inc.
THE PROFESSIONAL BOARD "THE HARD OF HEARING" 33
Joseph M. Kinkade, M.D., Tucson, Arizona
GOOD READING IN JOURNALS YOU DO NOT USUALLY SEE 32
LOS ANGELES RADIOLOGICAL SOCIETY 38

WOMAN'S AUXILIARY

WOMAN'S AUXILIARY TO THE AMERICAN MEDICAL ASSOCIATION 34
Mrs. Brick P. Storts, Tucson, Arizona, President-Elect, Woman's Auxiliary to the Arizona Medical Association, Inc.

DIRECTORY

LABORATORIES XXIII
SANATORIUM DIRECTORY XXIV
DRUGGISTS DIRECTORY XXVII
PHYSICIANS DIRECTORY XIX

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ARIZONA MEDICINE
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VOL. 11, NO. 1 JANUARY, 1954

Original ARTICLES

(Part III of a Three Part Article)

THE NEPHROTIC SYNDROME

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Phoenix, Arizona

(Continued from December, 1953 Issue)

E. In reference to treatment, one or more injections of plasma were given to 18 cases, with one patient receiving a grand total of 26,010 cc of plasma. Eighteen patients received one or more whole blood transfusions. Seven cases received one or more courses of salt poor albumin, and 3 cases were given one or more courses of human serum. Mercurials were used liberally. Sixteen patients received mercuhydrin, six received thiomerin, 3 were given salyrgan, and one patient received mercupurin. Thyroid was used in 12 cases. Acacia was given in two cases. Paracentesis was done on 16 patients, from 1 to 14 times. Other agents used were: ammonium chloride, (10 cases), urea (6 cases), magnesium sulfate, typhoid vaccine, Acidulin, Hypertussis, digitalis, theophylline and theobromine, thoracentesis, pitressin, pyribenzamine, Nephritin, Anedemin ,and large doses of Vitamin A (50,000 units daily). All were without consistent or lasting results, with the exception of paracentesis, which consistently relieved the discomfort and distress of ascites, but without lasting effect.

Diet was high protein and low salt or salt-free in 38 cases, low salt in five cases, and regular in two cases.

Sulfa drugs were available to all 45 patients, and penicillin was available to 43 out of the 45. Streptomycin was available to 31 patients. Aureomycin, Chloromycetin, and Terramycin were available only to the last 14 cases.

F. Anemia was seldom a problem. Of the many red cell counts done all were between 3.0 million and 5.7 million, with the exception of seven determinations, two of which were on patients in a terminal state. Hemoglobin varied from 6.0 Grams% to 17.0 Grams% with the great majority of determinations being over 10.0 Grams%.

Non-protein nitrogen values varied from 17 to 246 mg. %. Twenty-eight cases had more than 40 mg. %. Thirteen cases had greater than 60 mg. %, and six cases had more than 80 mg. %. Blood urea and creatinine determinations were not done consistently enough to be of use.

Total serum protein values ranged from 1.1 to 6.4 Grams %, with the bulk of values lying between 3.0 and 5.0 Grams %. Serum albumin varied between 0.23 and 4.7 Grams %, with most determinations being from 1.0 to 3.0 Grams %. Serum globulin ranged from 0.8 to 3.9 Grams %, with most values falling between 2.0 and 3.5 Grams %. Albumin/-Globulin ratios were obtained from 0.08 to 3.24. In 25 out of 183 determinations, the ratio was less than 1.0.

Cholesterol varied from 226 to 2310 mg. %, with 31 cases showing values greater than 500 mg. %.

Sedimentation rates were obtained, varying from 0 to 152 mm/hr determinations (Westergren).

Urinalysis revealed the urine specific gravity to be high initially during the onset of an exacerbation, with a drop during diuresis, and finally stabilizing during remission approximately between 1.015 and 1.030. Urine albumin was found to an abnormal degree in all cases, up to 10,000 mg. %. Hematuria of microscopic or gross degree was found in 34 cases. Thirty-three of these had more than five red cells per field on one or more occasions. Casts were consistently present.

Eosinophilia of abnormal degree was noted in 26 cases, ranging up to 30% of the differential count. Throat cultures revealed beta hemolytic streptococci on 15 occasions, pneumococci on 12 occasions, and hemolytic staphylococcus aureus on two occasions. E. coli, Klebsiella capsulata, H. influenza, and H. pertussis were cultured from the throat on one occasion each.

G. Of seven cases autopsied, one was anatomically diagnosed as pure lipoid nephrosis, and six as glomerulonephritis, by the examining pathologist. Of the six, two were considered to be acute glomerulonephritis, one was sub-acute glomerulonephritis, and three were chronic glomerulonephritis.

Microscopically, the kidneys of acute nephritis showed characteristic glomerular changes, with capsular thickening, hyalinization of capillaries and swelling of capillary endothelium, fibrinous thrombi in capillary tufts, and some sclerotic crescents. Marked swelling of the endothelium of the afferent arterioles was present. The tubules were widely dilated and contained albuminous fluid. The tubular epithelium showed moderate degenerative changes, and hyalin and granular casts were present in the lumina of the tubules.

The glomeruli of chronic glomerulonephritis demonstrated all stages of fibrosis, from thickened Bowman's capsule to complete obliteration and hyalinization. Occasionally, a severe inflammatory reaction was seen about a glomerulus. Functional glomeruli, in one case, were quite scarce. The convoluted and connecting tubules and Henle's loops showed severe degenerative changes, especially in the convoluted tubules, consisting of swelling, cloudiness of cytoplasm and rupture of cell membranes. The tubules were dilated and contained precipitated albuminous material forming casts. In some areas the tubules were completely atrophied, with fibrous replacement. Many fat droplets were present.

In the one case of pure lipoid nephrosis, the glomeruli showed only slight thickening, in some instances, of capillary basement membrane. A rare glomerulus had been scarred down and hyalinized. The tubules, however, were dilated, with droplets of fat in some of the tubular epithelial cells. The epithelium was flat and atrophic in some areas and sometimes swollen and foamy in others, obliterating the tubular lumen. "Foam cells" were identified.

Grossly, the kidneys of chronic glomerulonephritis showed thickened capsules which stripped with difficulty, and adherent, scarred surfaces with spider capillary distribution. The kidneys of pure lipoid nephrosis, however, were large, pale red, and the capsules stripped with ease.

There were no consistent or striking changes in the liver.

The pathological causes of death included an overwhelming beta hemolytic streptococcal infection with septicemia, generalized peritonitis and pleuritis in one case, an acute fibrinous pericarditis and pneumococcal septicemia in another. A third case was attributed to cardiac failure, pulmonary edema and broncho-pneumonia, a fourth to pneumococcal septicemia and meningitis, and a fifth case to pericarditis and atelectasis. Widespread bacteroides infection pulmonary atelectasis and edema were directly responsible for death in the case of pure lipoid nephrosis.

XI. Discussion.

Reference to "cures" in this report is purposely avoided. That some children suffering from the nephrotic syndrome do apparently get well, is not denied. However, what constitutes an adequate period of total remission to qualify as a cure is only speculation, and varies among different observers. Also, it is not difficult to conceive of a child recovering from the nephrotic stage of chronic glomerulonephritis, whose primary disease, nephritis, might lie clinically dormant for a considerable period of time before manifesting itself, perhaps fatally, at a later time.

A remission, for the purposes of this report, is a sustained period of symptomatic normalcy, with improvement, but not necessarily clearing, of urine and blood findings, unless specific-

ally referred to also as a laboratory remission.

Although the actual incidence of known allergic states (7 in 45) was not high in this group of patients, one is impressed with the surprising frequency and degree of eosinophlia. In view of the vacuum in which medical science finds itself regarding the etiology, or etiologies, of the nephrotic syndrome, one might postulate an allergic basis for the kidney pathology demonstrated. Just as the nasal mucosa in some individuals, and the bronchial mucosa in others, constitute the "shock" tisesue for allergenic effect, the tubular epithelium of the kidneys might be similarly acted upon by an unknown allergen or allergens, with resulting cellular changes that in some ways are comparable to those seen in other allergic states. ACTH could manifest its known disruptive influence on an antigen-antibody reaction taking place in the tubular cells, permitting the epithelium to return to normal function. In this light, the discussion by Galan (6) of increased tubular re-absorbtion of water in nephrosis, and unknown factors acting on the permeability of tubular epithelium becomes increasingly more interesting. One might speculate on what effect an antihistamine agent, possibly given intravenously, would have in the initial phase of an exacerbation of the nephrotic syndrome.

The complete absence of beneficial effect from any type of infection, other than measles, is verification of the need for early and intensive treatment of the number one killer in this disease, infection. The experience with measles in this series of cases is consistent with that of other observers. With adequate antibiotic control and a reasonable degree of reserve in the patient, measles is a therapeutic tool that should be sought for and utilized at any opportunity in the nephrotic child. Of the seven measles cases undergoing remissions following this disease, four were clinically diagnosed as possible lipoid nephrosis and three as nephritis. Of the five still remaining in remission, including the patient who also received ACTH, three were diagnosed as lipoid nephrosis and two as nephritis. Seven out of eight cases, or 87.5%, who developed measles, went into remission. Five out of the seven, or 71.5%, are still in remission.

Of the 10 patients experiencing remissions following ACTH therapy, four were clinically diagnosed as lipoid nephrosis and six as nephritis. Of the two still remaining in remission, both were diagnosed as nephritis. Ten out of 14 patients, or 71.4%, who were treated with ACTH, developed remissions. Two out of the 10, or 20.0%, are still in remission.

Twenty-one cases in the series had one or more remissions, occurring either spontaneously or following conventional types of treatment. Of this group, 11 were clinically diagnosed as lipoid nephrosis, and 10 as nephritis. Of the eight still in remission, five were diagnosed as nephrosis and three as nephritis. Thus, 21 patients out of 45 cases, or 46.6%, developed remissions either spontaneously or following treatment other than with ACTH or Cortisone. Eight of 21, or 38.1%, are still in remission. One patient was in a remission that could not be classified.

Quite obviously, the occurrence of measles in a nephrotic child is more likely to produce a remission than treatment with ACTH or other agents, and the remission is more likely to be a lasting one. It would seem that ACTH — induced remissions have the poorest record, as far as duration of remission is concerned.

Follow-ups revealed that seven, or 15.5%, of the original 45 cases were in some active phase of their disease at the time of writing. Sixteen patients, or 35.5%, were in remission. No record could be obtained on seven cases, or 15.5%. Fifteen of the 45 cases, or 33.3% have died.

Seven autopsies were obtained. All demonstrated marked tubular changes, as described. One case had sufficiently minimal glomerular changes as to be compatible with a pathological diagnosis of pure lipoid nephrosis.

It is interesting that this single case of lipoid nephrosis demonstrated seven red cells in the urine, a non-protein nitrogen of 71 mg.%, a blood pressure on one occasion of 150/84, and was clinically diagnosed as nephritis. As regards the other six cases of proven nephritis, five were clinically diagnosed as nephritis, and one was nephrosis. Of the remaining eight cases, not autopsied, five were clinically diagnosed as nephritis, and three as nephrosis.

As regards the 30 cases presumably still living, the data compiled thus far on each case plus prolonged observation of many of these cases would allow a probable diagnosis of lipoid nephrosis in six, and a definite diagnosis of

nephritis in three. The remaining 21 cases must necessarily be relegated to a middle ground or doubtful group at this time, being referred to only as possible nephrosis or possible nephritis.

X. Conclusions.

The occurrence of measles in a nephrotic child constitutes the best chance, either natural or therapeutic, for remission. It also produces the remission of best quality and longest duration.

ACTH and possibly cortisone represent the only recent advances in the treatment of the nephrotic syndrome of recognizable merit. Paracentesis is of considerable value as a counter measure against the distress of ascites, and, if anything, should be used more frequently than is being done.

The lessened average length of hospital stay of ACTH treated patients, as contrasted to those patients not treated with ACTH, suggests that its greatest value may be in the therapeutic inducement of remissions, thereby shortening the prolonged, tedious and financially exhausting hospital stays, and minimizing the hospital exposure of these children to infection.

Any infection in a nephrotic child, with the single exception of measles, should be treated promptly and intensively. There is almost no likelihood of beneficial effect resulting, and an excellent chance of detrimental effect from infection, other than measles, exists.

The disturbing regularity of eosinophilia in these patients comprises one of the most interesting facets of this disease, and may ultimately assume a logical place in the explanation of its etiology.

Regardless of whether lipoid nephrosis exists as a separate entity, or is simply a stage of nephritis, autopsy findings confirm the fact that the majority of fatal cases are nephritic at the time of exitus, and perhaps, if the process manifested as the nephrotic syndrome could be arrested or reversed in its initial stage, the outlook for those afflicted would be considerably brightened.

Pathology reports seem to confirm the existence of a renal disease, exclusively tubular in its destruction, called pure lipoid nephrosis.

The one case clinically diagnosed as nephritis, and subsequently diagnosed as lipoid nephrosis at autopsy, plus the number of cases presently in quite prolonged remissions, illustrate the hazard inherent in dogmatism in voicing a diagnostic or prognostic impression in this disease.

Enough of these children have been in prolonged remission to the present time to warrant a somewhat more optimistic outlook than was previously thought.

XI. Summary.

Forty-five cases, presenting originally as the nephrotic syndrome, cause undetermined, are analyzed. The disease, its subdivisions, and related conditions are defined.

Treatment is briefly dealt with, and, the relative value of various measures mentioned.

The present status of each case is given, and reference to prognostic and diagnostic accuracy in this disease is made.

The clinical, laboratory, and pathological characteristics of the nephrotic syndrome are described and discussed.

BIBLIOGRAPHY

1. Barnes, L. A.; Moll, G. H.; Janeway, C. A.: Nephrotic Syndrome, I. Natural History of the Disease, Pediatrics 5: 486, 1950.
2. Rosenblum, A. H.; Lander, H.; Fisher: Measles in the Nephrotic Syndrome, J. Pediat. 35: 574, 1949.
3. Addis, T.: Glomerular Nephritis, MacMillan Co., New York City, 1948, 1st Edition, pg. 206.
4. Block W. M.; Jackson, R. L.; Starns, G.; Butsch, M. P.: Lipoid Nephrosis; Clinical and Biochemical Studies of 40 Children with 10 Necropsies, Pediatrics 1: 733, 1948.
5. Galan, E.: Nephross in Children, Am. J. Dis. Child. 77: 328, 1949.
6. Bradley, S. E.; Tyson, C. J.: The Nephrotic Syndrome, N.E.J. Med. 238: 223 and 238: 260, 1948.
7. Schwarz, H.; Kahn, J. L.; Weiner, S. B.: Lipid Nephrosis, Am. J. Dis. Child. 65: 355, 1943.
8. Emerson, J., Jr.; Beckman, W. W.: Calcium Metabolism in Nephrosis. I. A Description of an Abnormality in Calcium Metabolism in Children with Nephrosis, J. Clin. Invest. 24: 564, 1945.
9. Rosenblum, A. H.; Lander, H.; Popper, H.: Lipoid Nephosis Complicated by Romologous Serum Jaundice, J. Pediat. 35: 465, 1949.
10. Janeway, C. A.: Management of Nephrosis, Pediatrics 2: 705, 1948.
11. Heymann, W.; Startzman, V.: Lipemic Nephrosis, J. Pediat. 28: 117, 1946.
12. Farr, L. E.; McFadyen, D. A.: Hypoaminoacidemia in Children with Nephrotic Crises, Am. J. Dis. Child. 59: 782, 1940.
13. Blumberg, R. W.; Cassady, H. A.: Effect of Measles on the Nephrotic Syndrome, Am. J. Dis. Child. 73: 151, 1947.
14. Meizlik, E. H.; Carpenter, A. M.: Beneficial Effect of Measles on Nephrosis, Am. J. Dis. Child. 76: 83, 1948.
15. Gottfried, S. P.; Steinman, J. F.; Kramer, B.: Chemical Studies in Children with the Nephrotic Syndrome, Am. J. Dis. Child. 74: 283, 1947.
16. Tyson, M. C.: Danger of Intravenous Mercurial Injections in Nephrosis, J.A.M.A. 117: 998, 1941.
17. Luetscher, J. A., Jr.; Hall, A. D.; Kremer, V. L.: Treatment of Nephrosis with Concentrated Human Serum Albumin. I. Effects on the Proteins of Body Fluids, J. Clin. Invest. 28: 700, 1949.
18. Farr, L. E.: The Significance of Protein Metaholism in the Nephrotic Child, J. Pediat. 17: 734, 1940.
19. Farr, L. E.: The Intravenous Administration of Small Doses of Casein Hydrolysate to Nephrotic Children and Its Effect Upon the Nitrogen Balance and Plasma Amino Acid Level, J. Pediat. 16: 679, 1940.
20. Farr, L. E.; Emerson, J., Jr.; Futcher, P. H.: The Comparative Nutritive Efficiency of Intravenous Amino Acids and Dietary Protein in Children with the Nephrotic Syndrome, J. Pediat. 17: 595, 1940.
21. Caldwell, G. W.: Treatment of Nephrosis with Vitamin A and Unsaturated Fatty Acid Therapy, Arch. of Ped. 58: 247, 1941.
22. Falkenstein, D. F.; Jackson, R. L.: Acacia Therapy in a Child with Nephrosis, J. Pediat. 16: 700, 1940.
23. Wilson, A. T.; Hadley, W. P.: Urinary Lysozyme. III. Lysozymuria in Children with Nephrotic Syndrome, J. Pediat. 36: 199, 1950.
24. Flood, R. G.; Pinelli, R. W.: Urinary Glycocyamine, Creatine and Creatinine, Am. J. Dis. Child. 78: 67, 1949.
25. Mallory, T. B.: Case 28472, N.E.J. Med. 227: 802, 1942.

CANCER OF THE STOMACH

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CANCER ranks second only to cardiovascular disease as the commonest cause of death in this country, and of all deaths due to carcinoma, about one-fourth are due to gastric cancer. As the age of the population increases the number of persons who will die of gastric cancer, also grows larger. There are at the present time probably about 45,000 new cases of cancer of the stomach each year in the United States and it is regrettable that the number of deaths each year also very closely approximates the same figure. A recent survey (3) of the cancer problem as affecting the general population revealed that less than 2 per cent of those developing cancer of the stomach were treated in time so that they might be cured of their disease. The very frequency of gastric cancer and the present almost non-existant absolute cure rate demands a serious consideration of the entire problem and a determination of how the number of persons who die from this condition might be diminished.

The natural history of gastric cancer is very important and any reasonable attack upon the problem of this disease must take into consideration the essential facts about its development and subsequent behavior. The onset is insidious, usually with few signs and there is no single group of symptoms which is characteristic. The stomach is a relatively large hollow organ and a lesion must become large enough to interfere either with one of the orfices or to disturb the motility of the organ before symptoms can develop. This is of course extremely variable, depending upon the rate of growth of any particular lesion, its exact location and its ability to infiltrate the underlying stomach walls. The first point to be made clearly understood is that really early gastric cancer is completely without signs and symptoms and that a variable period must elaspe before these growths attain a sufficient size to interfere with the function of the organ. There has been considerable speculation about how long it takes for gastric cancer to develop sypmtoms. How long it takes cancer of the stomach to make itself clinically manifest, no one knows for sure, and of course it varies from one lesion to another. However, some recent work (2) suggests that the latent interval may very well average somewhere around two years, depending of course on its location and the biologic aggressiveness of the particular lesion. Like cancer of the lung, it is necessary to divide the natural history of cancer of the stomach, into two phases. First, the silent or asymptomatic phase lasting over a variable period of time, certainly over many months and frequently years, which is followed by the clinical or syptomatic phase which begins when syptoms are noticed. All teaching about gastric cancer and most of the thought about this condition has in the past ignored the asymptomatic phase and has been confined entirely to discussion of only the clinical or symptomatic phase and this is not, and cannot be considered in any way early gastric cancer. To repeat, early cancer of the stomach is a silent disease and symptoms, although they may be early in themselves are a sign of relatively late disease. Accepting the idea that symptomatic gastric cancer is relatively late gastric cancer, the need for prompt and effective surgical treatment becomes apparent and the tragedy of further delay can be seen in its true perspective.

The first symptoms of gastric cancer can be very confusing. Often there is only vague indigestion, occasionally diarrhea or constipation, somctimes gaseous distention. Often the earliest noted symptom is unusual fatgue. Any of these symptoms persisting over a week or two should be carefully investigated. Weight loss, chronic indigestion, and signs of obstruction or a palpable mass cannot be considered early symptoms, but are usually indications of far advanced hopeless gastric cancer. If there is delay until the symptoms point accurately to cancer of the stomach, the possibility for cure is usually already lost.

The clinical work-up of the gastric cancer suspect is relatively simple. It should never require more than a week for its completion. The history is frequently not too helpful and a careful physical examination, while essential

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may only be reassuring in that no absolute signs of inoperability are present. A routine blood count may indicate unexplained secondary anemia. The gastric analysis is informative as to the presence or absence of free hydrochloric acid but this information in itself can have no bearing upon the malignancy or benignancy of any gastric condition. A stool can be run for occult blood, if negative it means nothing; if it is positive it only indicates that the patient is bleeding somewhere along the gastrointestinal tract. The all important examination, the one examination which should be ordered without delay is the roentgenographic examination by a competent radiologist.

The effectiveness of radiographic diagnosis for gastric neoplasms exceeds 95 per cent which is high indeed for any diagnostic test, but this very high index of accuracy is probably only another reflection of the advanced nature of the pathology of the average case by the time it gets to the radiologist. The mere fact that this test does carry this high degree of efficiency merely means that the radiologist is usually seeing not early, but advanced cancer of the stomach. Gastroscopy is frequently useful in questionable cases but its greatest use is in following non-surgical conditions. Papanicolaou techniques of various types, especially those applying the abrasive balloon and papaine solutions, have been developed to a very high degree of accuracy and may very well clinch the diagnosis before surgery. Its practical application to any particular case however, probably will be limited to those questionable cases where the roentgenographic diagnosis is in doubt.

Once the presence of a suspicious lesion in the stomach has been demonstrated there is only one treatment and that is immediate and adequate surgery. The type of surgery necessary to cure cancer of the stomach varies considerably with the size of the lesion and its location. It is perfectly obvious that if the cancer of the stomach is still limited to the organ itself without any nodal metastases being present, that removal of that portion of the stomach involved together with an adequate margin would result in a cure. Recent studies (4) show that extension along the intramural lymphatics of the stomach itself occur far more extensively and frequently than was once thought and there has been a tendency to increase the margins of normal tissue being removed. This trend has been further supported by the finding of residual disease in the resection line in a very high percentage of opertive specimens(1, 10). It is obvious that lesions in the distal portion of the stomach where small lesions cause symptoms early and where the removal of the adjacent lymph nodes can be accomplished by subtotal gastrectomy could be cured by this procedure. However, surgeons are becoming increasingly aware of the fact that lesions along the lesser curvature in the region of the cardia metastasize quite early to the region of the celiac axis and probably no procedure less than a total gastrectomy will effect a cure in this area. Obviously the absolute prerequisite for cure in gastric cancer is that the disease be so located and limited in its extent that the surgeon is technically able to encompass all the neoplastic tissue during the procedure of resection. If this is not possible the operation is from the onset palliative only in its objective and the possibility of a cure is non-existent.

Unfortunately, the exact extent of the disease is rarely apparent at exploration. Microscopic extensions and metastases which preclude the possibility of cure are often present at the time of the procedure. With the increasing acceptance of palliative resection as good management the surgeon is not so often faced with the decision as whether or not to resect but is confronted with the responsibility of ever increasing the scope of the operation so that the entire neoplastic process may be excised and a cure obtained. This philosophy has has resulted in more extensive removal of the regional nodes and omental tissue. With the advent of various refinements in anesthesia, transfusions, antibiotic therapy and new operative approaches, more radical resections are being done. The procedures of cardiectomy and total gastrectomy have permitted surgical removal of lesions previously regarded as inoperable because of their location. It is now technically possible to do a near evisceration of the contents of the upper abdomen and have the patient survive. Whether or not such heroic methods will contribute to an improved cure rate remains to be seen. It is primarily the stage of the disease, not the radical scope of the surgery which predetermines the suc-

cess of resection. To obtain a cure then, delay in treatment must be cut to an absolute minimum. There can be no place in the curative attack on the gastric cancer problem for observation of questionable cases if our present cure rate is to be increased.

What are the cure rates for gastric cancer at the present time? In a recent very large survey(3) as applied to the general population, there were some very encouraging discoveries. One-third of all patients who successfully survived gastric resection for cancer were alive and free of signs of recurrent disease five years later. True, some patients did develop recurrent disease after the fifth anniversary of their operation and some died of other causes before they had reached their fifth anniversary. The encouraging point is that one in three of patients who survive resection of the stomach for cancer may expect to be alive and free of his disease at the end of five years. Another important finding was that the operative mortality for major stomach surgery had progressively dropped in the last few years, until at the time of the survey it was less than five per cent for subtotal gastrectomy for cancer. Unfortunately, only about 30 per cent of patients who were operated were suitable for curative resection. While operability rates in certain private hospitals and clinics ran as high as 75 per cent, when all hospital admissions were considered this figure dropped to somewhere around 40 per cent. At the present time only one patient in eight admitted to a hospital for cancer of the stomach is in good enough condition and has his disease so localized that he is eligible for a curative resection. Further study of mortality figures suggests that about 20 per cent, or one in five, of all persons dying of this condition are never admitted to any hospital and apparently develop their disease and die at home without any chance for curative treatment. This is a sharp and unhappy contrast to the findings that one in three persons who have successful gastric resections may expect to be free of disease at the end of five years. The fact is that so few people are admitted to hospitals in condition suitable for surgery that the overall cure rate for the general population developing gastric cancer is not much more than 1 per cent. What then are the reasons for this appalling and unnecessary discrepancy between the possible and actual cure rate for gastric cancer today?

In an effort to determine the major factors involved in the delay of treatment, 811 consecutive case records were recently examined (3). It was found that while 17 per cent of patients reported to their physicians less than one month after onset of symptoms that it was not until six months had passed that the majority had made their first visit. It was gratifying to note that over 80 per cent of patients had a diagnosis of gastric abnormality established in less than one month from the time of their first physician visit. This indicates commendable promptness on the part of the doctor in submitting the patient to roentgenographic examination. The disheartening point is that after the diagnosis was made that so little was accomplished. Only 2 per cent of these patients were admitted to a hospital for surgery in less than 1 month after the onset of symptoms. At the end of six months at which time 60 per cent had seen their doctors and of these more than 90 per cent had had diagnoses of gastric lesions established, still only 10 per cent had come to definitive treatment. This suggests that after a diagnosis of a serious gastric condition becomes apparent that either the patient must refuse treatment or that the physician in charge of the case has not convinced that patient of the importance of prompt and adequate surgery. Almost always, careful scrutiny of the case history will reveal that the patient follows the physician's advice. This latter delay too often reflects the doctor's lack of conviction that an immediate operation is imperative if cure is to be effected. A second important cause for delay in treatment is the fact that often it is impossible for the radiologist to differentiate between gastric cancer and gastric ulcer or some other abnormality of the stomach. His report necessarily will contain this indecision. It is not fair to expect the radiologist nor is it possible for him to make a definite diagnosis in every case. Certainly if carcinoma of the stomach is to be discovered and treated while still early and in a curable stage, the characteristic signs will often be absent. That it should be required that the disease progress to such a stage prior to surgery that the radiologist can make a definite diagnosis of carcinoma of the stomach is equivalent to waiting for signs of probable incura-

bility. A third group of patients have a delay in their surgical treatment due to the fact that they have lesions which are regarded as benign gastric ulcers. Here long periods of medical management or so-called "observation" frequently permit the progression of the disease to an incurable or inoperable stage. Medical management of gastric ulcer can be a very dangerous program unless supervised with extreme caution, preferably in a hospital and never continued unless healing is complete in two or three weeks. In view of the general superior results obtained by the surgical treatment of benign gastric ulcers as compared to medical management, the presence of a benign gastric ulcer must be regarded as a not absolute but a relative indication for immediate gastric resection.

The fourth and numerically most important cause for delay lies in the natural history of the disease itself. Reference is made to the long latent period during the development of cancer of the stomach. Truly early gastric cancer is alway asymptomatic. As stated earlier there is evidence to suggest that the average duration of this silent period is somewhere in the neighborhood of two years. During this time, nodal and distant metastases frequently occur, making the patient completely hopeless from the standpoint of a cure. Probably if all delay in diagnosis, and treatment after symptoms develop were to be eliminated by some possible Utopian arrangement, only about 25 per cent of all patients with gastric cancer could be operated on while they still have a chance for a permanent cure.

Granting that current efforts to control this disease leave much to be desired, how might the present cure rates be improved? First by a radical change in philosophy in regard to this disease. Both layman and physician alike must accept the truth that gastric cancer is curable if operated while still early. If doctors will accept this philosophy and so advise their patients, the major portion of the delay from diagnosis to treatment could be eliminated and the cure rate with present methods could be measurably increased.

How about the 75 per cent of patients who are probably incurable by the time their symptoms develop? What can be done here? Obviously the only way to discover patients with gastric cancer still in the latent phase is to submit the population considered to be at risk for the condition, to some type of screening test. Such an idea is not at all new, and various types of tests have been applied to this problem. Various blood and urine tests have proven to have little or no value. Special groups of people who have been regarded as being susceptible to gastric cancer have been submitted to routine x-ray examinations (6, 7). Some of these surveys(5, 8) have been restricted to people over 40 or over 50, those who had relatives with cancer, or those who had occult blood in their stools. The result has not been at all encouraging. More recently the photofluorographic survey method has been tested in several large centers. These fluoroscopic studies indicates that unsuspected gastric cancer can be uncovered at rates predicted from the known incidence figures. To quote one group of investigators(9), "Gastric photoflurography can be considered an inexpensive cancer test with single organ specificity, high accuracy and low false positive rate." It is difficult to agree that the procedure is an inexpensive cancer test but it appears to have as high an accuracy as any tool available at the present time. Perhaps the photofluorographic survey method is not the answer to the problem of discovering asymptomatic gastric cancer but certainly everything possible should be done to eliminate the delay in surgical treatment in the symptomatic phase. It is difficult to escape the conclusion that if any impact is to be made upon the problem of asymptomatic gastric cancer, that it will have to be by some survey means such as the photofluorographic method.

REFERENCES

1. Berne, C. J. and Freedman, M. A.: Local recurrence following subtotal gastrectomy for cancer. Journal of Surgery, 82:5-7, July 1951.

2. Friesen, S. R.: The silent interval in gastric cancer. J. Nat. Cancer Institute, 10:545-549, October 1949.

3. Guiss, L. W.: End results for gastric carcinoma; 2891 cases. International Abstracts of Surgery in Surg., Gynec. and Obste., 93:313-331, October 1951.

4. Zinniger, M. N. and Collins, W. T.: Extension of carcinoma of the stomach into the duodenum and esophagus. Ann. Surg., 130:557-566, Sept. 1949.

5. Rigler, L. G.: Roentgen examination of the stomach in symptomless persons. J.A.M.A., 137:1501-1507, August 21, 1948.

6. St. John, F. B., Swenson, P. C. and Harvey, H. D.: An experiment in the early diagnosis of gastric carcinoma. Ann Surg., 119:225, 1944.

7. Sherman, R. S.: Roentgenoscopic survey for asymptomatic gastric cancer. J.A.M. Women's A. 3:136, 1938.

8. State, D., Gaviser, D., Hubbard, T. B. and Wangensteen, O. H.: Early diagnosis of gastric cancer. J.A.M.A., 142:1128-1132, April 15, 1950.

9. Wigh, R. and Swenson, P. C.: Gastric adenomas and cancer —detection by photofluorography, presented at the Second National Cancer Conference, Cincinnati, Ohio, March 3-5, 1952.

10. McNeer, G., Vanden Berg, H. Jr., Bowden, L., and Donn, F. Y.: A critical evaluation of subtotal gastrectomy for the cure of cancer of the stomach. Ann. Surg., 134:2-7, July 1951.

SURGICAL TREATMENT OF SUBARACHNOID HEMORRHAGE DUE TO INTRACRANIAL VASCULAR LESIONS, A REPORT OF 62 CASES*

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IMPROVEMENT in technical aids available to the neurosurgeon has lowered the operative mortality of surgical treatment for intracranial vascular lesions to a level of other major brain surgery. Furthermore, hemorrhage from these vascular lesions carries a risk to life of approximately 50 per cent and a risk of serious neurological disability almost as great. Therefore, it is imperative that patients suspected of having one of these conditions be given the benefit of neurosurgical evaluation as soon as their condition warrants transportation to where such facilities are available.

During the years 1946-1953, 62 patients were treated by the Neurosurgical Section of Walter Reed Army Hospital for intracranial vascular lesions. The size and location of the lesion was determined by history, neurological signs, arteriography, electroencephalography and occasionally by pneumoencephalography. These vascular lesions have been classified into three groups: 1. Saccular or berry aneurysms of the circle of Willis. 2. Congenital arteriovenous anomalies or varices of the brain. 3. Acquired arteriovenous fistulae of the internal carotid artery and the cavernous sinus.

Aneurysms. The largest number of patients has been those with saccular anerysms manifested by subarachnoid hemorrhage or sudden development of focal neurological signs. Since the mortality of this lesion from initial and subsequent hemorrhage is so high, surgery should be considered in all cases. Each patient must be evaluated on an individual basis and the particular operative procedure adopted to secure maximal results with minimal risk.

Aneurysms of the internal carotid artery below its bifurcation should be treated by initial ligation of the artery in the neck, when preliminary compression of the artery is tolerated for thirty minutes without producing neurological signs. If the patient's age and general condition permit, the neck ligation should be followed by intracranial clipping of the internal carotid artery, thus trapping the lesion between clips and ligture, and isolating it from the circulation. Those aneurysms located on the anterior communicating artery are probably best left alone, since the risk of surgery here is as great or greater than if the lesion were left alone.

Middle cerebral artery aneurysms on the dominant hemisphere should be treated by ligation of the carotid artery in the neck. If the aneurysm is on the nondominant hemisphere and has a neck which can be clipped, intracranial attack should be done.

Aneurysms in the posterior fossa should be exposed surgically and clipped if they are located on an artery which can be sacrified with safety. Otherwise, only packing with muscle is justified. Ligation of the vertebral artery is not advised.

The results of surgical treatment are tabulated to show the operative procedures used and the risks of hemiplegia and post-operative fatality calculated percentage-wise. Five patients had a ligation of the carotid artery in the neck as the only treatment; there were no deaths and one hemiplegia (20 per cent).

Thirty-five patients had intracranial operations with two deaths (6 per cent) and three hemiplegias (9 per cent). Of the 35 patients, 16 had a combined intracranial approach and ligation in the neck with one death (7 per cent) and two hemiplegias (13 per cent).

Of all the 40 patients with aneurysms treated surgically there were two deaths (5 per cent) and four hemiplegias (10 per cent). All patients surviving operation are alive and have had no recurrence of symptoms nor signs.

Congenital Arteriovenous Anomalies. These lesions are probably of congenital origin and grow progressively until they declare their presence by recurrent epileptic seizures or subarachnoid hemorrhage.

Surgical excision of these lesions is a formidable task accompanied by high morbidity and mortality in unselected cases. Furthermore, the risk to life from repeated hemorrhage is much

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TABLE I

	Cases	Hemiplegia No.	Hemiplegia Per Cent	Deaths No.	Deaths Per cent
Occlusion neck of aneurysmal sac:					
With removal of aneurysm	3	0		0	
Without removal of aneurysm	5	0		0	
Trapping carotid artery between intra cranial clip and ligation in neck	16	2	13	1	
Trapping aneurysm between intracranial clips	10	1	10.0	1	
Packing aneurysm with muscle	1	0		0	
Intracranial operation of all types	35	3	9.0	2	6
Ligation carotid artery in neck only	5	1	20.0	0	
Total	40	4	10	2	5

TABLE II
Arteriovenous Anomalies

	Number	Death	Percent	Sequelae Due to Operation	Improved
Excision	6	1	17	0	4
Decompression	2	0		0	0
No Surgery	8	0		0	0
Total	16	1		0	4

smaller than that from saccular aneurysms. All of these factors mitigate against surgical attack except when one or more of the following conditions are present: 1. Uncontrollable epileptic seizures. 2. History of two or more subarachnoid hemorrhages. 3. Presence of intracerebral hematoma as evidenced by shift of blood vessels in the arteriogram. 4. Location of the lesion in a place where excision can be done without producing hemiplegia or aphasia.

X-ray therapy is not advised. Ligation of the carotid artery in the neck is seldom indicated because collateral circulation will quickly develop in the lesion from the circle of Willis.

The surgical results in Table II are self explanatory.

Carotid Artery-Cavernous Sinus Fistulae. This condition is usually caused by closed trauma to the head with or without fracture of the bones in the region of the cavernous sinus. This arteriovenous mass becomes progressivcly larger producing a machinery-like bruit, pulsating exophthalmos, ocular palsies and loss of vision in the affected eye. If untreated, the lesion becomes larger with increasing neurological deficit and eventual death by rupture.

Initial treatment requires ligation of the internal carotid artery in the neck. If the fistula persists, the internal carotid artery should be exposed and clipped intracranially, thus trapping the lesion between the ligature in the neck and the intracranial clip.

A total of six patients have been operated on and cured of this lesion. All patients required intracranial clipping after ligation of the internal carotid artery in the neck. There were no postoperative deaths nor hemiplegias. One patient died two years after surgery from rupture of a berry aneurysm on the opposite carotid artery.

SUMMARY AND CONCLUSIONS

1. Sixty-two patients with various types of intracranial vascular lesions have been treated surgically.

2. Forty patients with saccular aneurysms of the circle of Willis were operated on with a mortality of 5 per cent and a hemiplegic morbidity of 10 per cent.

3. Eight patients with arteriovenous anomalies of the brain were operated on with 13 per cent mortality and no hemiplegic morbidity.

4. Six patients with carotid artery cavernous sinus fistulae were treated by ligation of the internal carotid artery in the neck followed by intracranial clipping of the carotid artery with no operative mortality nor morbidity.

PHOENIX Clinical CLUB

The Case History in this discussion is selected from the Case Records of the Massachusetts General Hospital, and reprinted from the New England Journal of Medicine. The discussant under Differential Diagnosis is a member of the staff of the Massachusetts General Hospital. The other discussants are members of the Phoenix Clinical Club.

CASE REPORT

The patient, white male, 52 years of age, a contractor, was admitted to the Osler Clinic (service of Professor Warfield T. Tongcope) on the evening of February 1, 1936, with the complaint of severe headache that had started suddenly four days earlier in the occipital region and had gradually become more generalized and more severe.

Family History. The parents of the patient are both dead, the mother having died at the age of 62. He was one of a family of six, four of whom are living and well, one having died of influenza at the age of 15. The family in general has been healthy except for a tendency to obesity. There has been no history of any disease similar to the patient's in his family.

Past History Of Patient. Except for measles in childhood and an attack of pneumonia at the age of 12, the patient has enjoyed excellent health except that for many years he has had a monthly headache lasting 10 or 12 hours, apparently migraine. He denies venereal infection at any time in his life.

His habits with regard to food and drink have been abnormal. It is said that he has taken only one meal a day (in the evening). On rising in the morning he has taken one cup of coffee with two small glasses of whiskey. There has been no midday meal. He has been a liberal drinker of wine, consuming six or seven bottles daily in the summer time and often as many as 10 bottles daily in the winter time. In addition, he states that he has taken "as much beer as he could get." He smokes from three to six cigars daily.

He has never been operated upon and has suffered no traumata.

About one year ago his eye-sight began to fail and he was fitted with glasses.

History Of Present Illness. Four days before admission to the hospital, the patient, having felt perfectly well until that time, had spent the afternoon at the movies. After supper, the one meal that he eats each day, he had not felt quite up to the mark. About 8:00 p.m. he went from the hot kitchen upstairs to a cool porch to get some clothing and on returning to the warm room he was suddenly seized with a severe, continuous, throbbing headache, beginning in the posterior part of the head and right temporal region and soon spreading over the whole of the head. He went to bed immediately, felt nauseated and tried to vomit within ten minutes after the onset of the headache. He slept some through the night but next day the headache was worse. He felt feverish, sweated profusely and found it difficult to open his eyes or to see what was going on about him and was unable to eat as food caused nausea. He could however, retain water in the stomach. On the second day, he took 12 pills that came from a drug-store but without any relief. Indeed, the symptoms not only persisted but became intensified. There was no bowel movement during four days despite numerous doses of salts. He was not unconscious or stuporous at any time and remembers coming to the hospital. There is no history of overexertion, excitement or trauma preceding the attack.

Physical Examination (Dr. Mirick and Dr. Harvey). Temperature 101. Respiratory rate 28. Pulse rate 56. The blood pressure was 150 systolic, 75 diastolic. The patient was evidently suffering severe pain and was so acutely ill that he was disturbed as little as possible during the examination. There was evident photophobia. The patient was somewhat obese and the skin was moist. The pupils were small and reacted well, both to light and accommodation. There was no nystagmus and no conjugate deviation of the eyes. Examination of the eye grounds was negative. There was some deflection of the nasal septum to the right. Moderate gingivitis. Slight pharyngitis. The glands at the angle of the jaw were palpable but the glands elsewhere were not enlarged. No enlargement of the thyroid gland. There was marked rigidity of the neck and a definitely positive Kernig sign. The lungs and heart were

negative. The radial arteries were palpable but not much thickened. Abdomen and genitalia negative. Deep reflexes everywhere normal. Abdominal and cremaster reflexes present. Babinski negative on both sides. There was some tenderness on pressure over all of the anterior part of the head.

Laboratory Tests. Blood: red blood cells 5,330,000; hemoglobin 120; white blood cells 13,860; polymorphonuclear neutrophiles 80 per cent; eosinophiles 2 per cent; small mononuclears 18 per cent. URINE: Sp. Gr. 1.020; trace of albumin; no sugar; a single hyaline cast seen; no white blood cells; no red blood cells. CEREBRO-SPINAL FLUID: Lumbar puncture done in the accident room before sending the patient up to the ward revealed a cerebrospinal fluid that was under pressure of 230 mm. of water. It was grossly bloody, contained 140,000 red blood cells per cu. mm. and 520 white blood cells of which 80 per cent were polymorphonuclears and 20 per cent small mononuclears. On sedimentation the supernatant fluid was yellowish (anthochromia).

Course In The Hospital. The patient was kept quiet in bed with orders for liquid diet, with limitation of the fluids to 3,000 c.c. He was given paraldehyde occasionally in 20 c.c. doses.

On the following day, February 2, the blood pressure had fallen to 144 systolic and 80 diastolic but the patient still complained of severe pains in the head. In the afternoon he was given a dose of avertin and the blood pressure afterwards fell to 130 systolic and 60 diastolic. Another lumbar puncture was done the pressure was 210 mm., Queckenstedt negative. Red cell count in the spinal fluid 130,000. White cell count 600. That evening the patient felt much better though he was still drowsy from the sedatives. The headache had become less severe.

On February 3, another lumbar puncture was done the fluid was blood tinged. About 8 c.c. were withdrawn. The pressure was 240 mm., Queckenstedt negative. Red blood cells 21,000. White blood cells 420. The headache continued but was not quite so severe. He was given another dose of avertin.

On February 4, the patient complained of frontal headache. There was no vomiting nor any significant change in respiration, blood pressure or pulse. Cerebrospinal fluid (8 c.c.) removed at 8:00 A.M. showed an initial pressure of 210 mm. The fluid was cloudy and of pinkish color. Red blood cells 14,420; white cells 230.

Another lumbar puncture was done at 8:00 P.M. The initial pressure was 220 mm. About 18 c.c. of pinkish, slightly cloudy fluid were removed. Red cell count 12,000.

On February 5, lumbar puncture was done in the early morning. The initial pressure was 190 mm.; 7 c.c. of pale pinkish fluid removed; red blood cells 9,700. During the day the patient improved much symptomatically. The blood pressure was 140 systolic and 90 diastolic. The respiratory rate 20. Pulse rate 68. He received no sedatives during that day except a little codeine. At 9:00 P.M. another lumbar puncture was done. The initial pressure was 190 mm.; 10 c.c. of pale yellow fluid removed. The red cell count was 13,000 in the fluid.

On February 6, in the afternoon, another lumbar puncture was done. The initial pressure of the fluid was 60 mm.; 8 c.c. of pale yellow fluid removed. Red cell count 130; white cell count 120.

By February 7, the patient had improved so much that he said he felt himself again. The headache had disappeared, he could open his eyes comfortably, the neck was no longer stiff, and the Kernig sign had disappeared. Cultures from the blood and cerebrospinal fluid remained negative.

DR. BEN P. FRISSELL

The protocal of the last case which I discussed before this group was prefaced by a remark by Dr. Fuller Albright to the effect that unless he was all wrong, the case presented no diagnostic difficulties. I am very much tempted to follow the cue of Dr. Albright in this case for, in my book, the combination of severe headache and grossly blood spinal fluid speaks for a diagnosis of subarachnoid hemorrhage. The symptoms and the clinical and laboratory findings can be very adequately explained by this diagnosis. These are primarily the signs of meningeal irritation; i.e., headache, nausea, stiff neck, positive Koernig sign, photophobia, etc. The temperature elevation is likewise compatible with this diagnosis as is the moderate leukocytosis and, for some unknown reason, albuminuria is a finding rather constant in cases of subarachnoid hemorrhage. There has been no plausible explanation for this finding. It has been ascribed to reflex irritation of the renal

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Whenever nausea, vomiting and vertigo are disturbing and complicating factors, Dramamine may be used with confidence.

Keats[1] outlines the wide list of conditions in which Dramamine (brand of dimenhydrinate) has proved valuable as follows: "It has been well established in the control of motion sickness. It has been used effectively in the prevention and treatment of seasickness, airsickness, [in the treatment of] the nausea of pregnancy, Ménière's syndrome, . . . radiation sickness . . . and postfenestration reactions. . . . The site of action is imperfectly understood, but there is indication of an action of depressing labyrinthine function or its neural pathways, a highly selective central action, or both. Few side reactions of this drug have been noted."

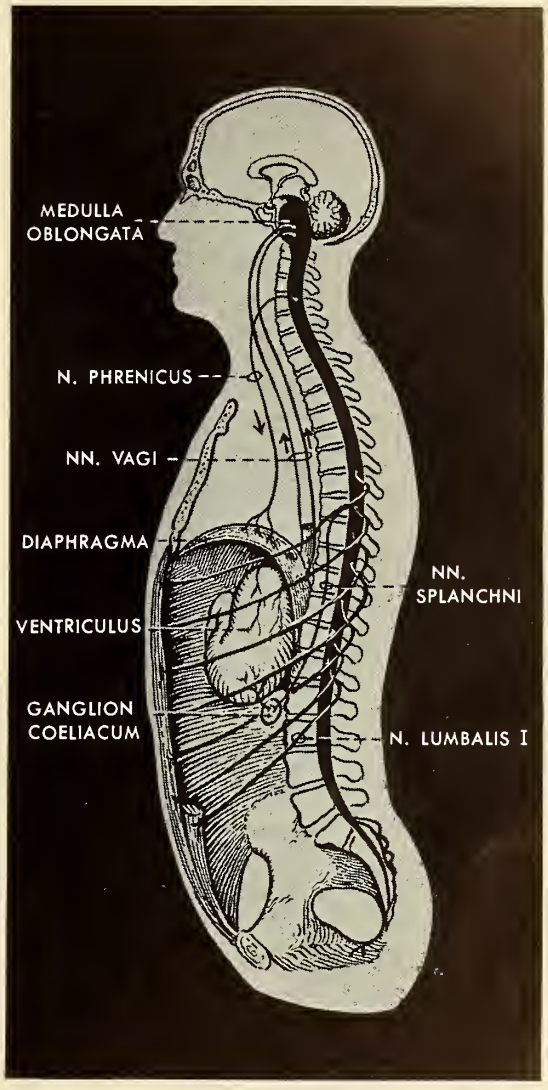
The usual dose for motion sickness is 50 mg. (one tablet) taken one-half hour before departure and, if necessary, before meals for the duration of the journey. Control of nausea and vomiting of other conditions and severe motion sickness is achieved, with minimal drowsiness, by a dosage of 100 mg. every four hours.

"[Dramamine] is administered orally or rectally. . . . The same doses may be administered rectally by insertion of the tablet or other suitable form. . . ."[2]

Dramamine Liquid is particularly useful for children.

Dramamine is accepted by the Council on Pharmacy and Chemistry of the American Medical Association.

1. Keats, S.: Ataxic Cerebral Palsy with Akinetic Seizures: Dramatic Response to Dramamine, J. M. Soc. New Jersey *50*:53 (Feb.) 1953.
2. Council on Pharmacy and Chemistry: New and Nonofficial Remedies, 1953, Philadelphia, J. B. Lippincott Company, 1953, p. 471.



THE VOMITING REFLEX: *Vagus→ nodose ganglion→ solitary tract→ spinal cord→ cervical, thoracic and lumbar nerves to diaphragm, cardiac sphincter, stomach, abdominal and pelvic musculature. (After Krieg, W. J. S.: Functional Neuroanatomy, ed. 2, New York, The Blakiston Company, Inc., 1953, p. 104.)*

SEARLE *Research in the Service of Medicine*

tubules and to some central nervous system stimulation similar to that found in cases of cerebral hyperglycemia. The slow pulse and the moderate elevation of blood pressure speak for increased intracranial pressure as does the increased manometric pressure recorded at the time of the spinal fluid examination. There are usually no eye ground changes unless the pressure increase is so great as to produce coma which did not happen in our case.

The finding of a mild pharyngitis, enlarged cervical lymph nodes, and chronic gingivitis at the time of examination, together with the fever and leukocytosis, does not tend to turn me from my original impression even had we not been told at the end of the protocol that the cultures of the spinal fluid were negative throughout the period of hospital observation. Given a man with perverse eating habits and the drinking and smoking habits which this man claimed, I scarcely see how we can expect to find a normal-looking pharynx for the amount of cigar smoke and alcoholic beverage that traversed his pharynx daily over a period of years should be expected to leave its mark.

I do not feel that atypical meningitis or encephalitis need serious consideration in differential diagnosis. A brain tumor with bleeding must be considered and particularly carcinomatosis of the central nervous system with involvement of the meninges can produce both headache and bloody spinal fluid.

The bloody spinal fluid which is characteristic of subarachnoid hemorrhage differs from the so-called contaminated bloody tap in several respects: 1) This blood is intimately mixed with the spinal fluid and all specimens taken have the same appearance, 2) Blood does not clot on standing, and 3) When the specimen is allowed to stand and the blood settle out of the fluid, the remaining fluid presents a yellowish cast, or the so-called xanthochromic spinal fluid due to breakdown of red cells which occurs after a few days. This change is said to occur after approximately 24 hours following the hemorrhage. The supernatant fluid in this case is described as xanthochromic at the time of the first spinal fluid examination.

A large cerebral hemorrhage can in some cases break through the piamater and produce an extravasation of blood into the subarachnoid space, thus giving a bloody spinal fluid. However, in such cases, there is usually peripheral paralysis typical of the hemorrhage and in the average case the fluid is xanthochromatic rather than frankly bloody.

Subarachnoid hemorrhage may be due to several causes, and, unless there is a sequel to the story which Dr. Fahlen has ended after the 7th day of the patient's hospital admission, I do not feel that we discussants or he will know the answer as to the exact etiology of this man's hemorrhage. Traumatic subarachnoid hemorrhage, I believe, can be ruled out from the history as given and this of course is one of the common causes of such hemorrhage. So-called spontaneous, or non-traumatic subarachnoid hemorrhage may be the result of a rupture of an aneurism in the region of the circle of Willis which I suspect is most likely the origin of the present pathology or it may be produced as previously mentioned by a cerebral hemorrhage rupturing through the pia into the subarachnoid space of from a hemorrhage into one of the ventricles passing by way of the foramen of Majendii into the subarachnoid channels or from the rupture of an arteriosclerotic vessel on the surface of the meninges. Likewise, subarachnoid hemorrhage may occur in the course of certain systemic diseases including nephritis, purpura hemorrhagica, typhoid fever, and measles. In the older literature particularly, and I note that this is an older case for discussion dated February 1936, syphilis is considered as one of the prominent causes of vascular deterioration and resultant rupture and hemorrhage of a cerebral vessel accounting for a high proportion of subarachnoid hemorrhages. It is quite possible that Dr. Fahlen may still have in his pocket the Wasserman report just as Dr. Watkins last week carried around the laboratory report concerning the L.E. cells. If such is the case, let it still be said that we did not fail to mention syphilis as a possible factor.

Our patient, at age 53, and particularly if we belong to the school of thinking that is somewhat opposed to the excessive use of alcohol, tobacco, etc. probably has enough arteriosclerotic changes in his own right to account for a rupture of one of his cerebral vessels without the assistance of syphilis.

The so-called Berry aneurism, so named apparently because of its size, is most frequently found involving some of the vessels in the region

of the circle of Willis. They are of such size generally that they produce no pressure symptoms until they finally leak or rupture. There is described a process of "leaking" from these lesions which, it is felt, may account for periodic episodes of headache of temporary nature without any cerebral spinal fluid findings, etc. and some types of periodic headaches have been ascribed to temporary distention or dilatation of the aneurismal sac. The patient under consideration gives a history of having had cyclic headaches lasting ten or twelve hours over a period of many years before his current illness. It is enticing to surmise that perhaps these so-called migraine headaches might be due to a smouldering aneurism around the circle of Willis which finally exploded four days before the patient came under hospital observation. The incident described at the onset of his headache, that of going out of a hot kitchen following his evening meal presumably pretty well saturated with alcohol as well as food, inasmuch as that was his only meal for the day, walking upstairs on to a cool porch, and then returning, might very well set the stage for the necessary changes in pressure factors in the vascular system to produce a final rupture of a weakened aneurismal sac. Such cases have a varied outcome. Not all of them, by any means, die during the acute attack. Of one series reported, a total of 81 cases being studied, 49 died during their hospital stay, 32 recovered, but of 25 remaining alive up to a period of twelve years, only eight remained free of symptoms. These patients subsequently had residual symptoms of headache, fits, giddiness, faintness, and mental retardation. Recovery in these cases may take as long as two years. The mortality rate according to this series, would appear to be a little above 50%. One finding, which is absent in our case, in those cases of a rupture of an aneurismal sac around the circle of Willis, is involvement of the 3rd and 4th cranial nerves. There is no mention of diplopia in the protocol.

The treatment of subarachnoid hemorrhage is essentially rest and complete quiet for the patient with relief of headache in the early stages and repeated spinal fluid drainage as was done in this case, being careful of course to not lower the cerebral spinal fluid pressure below the normal level. I am somewhat confused over one point in the treatment, having been schooled in the belief that morphine and other suppressing drugs were to be avoided in such cases. I ran on to a reference which advocates the use of morphine early in the treatment of subarachnoid hemorrhage. I would appreciate a little elaboration on this point by Dr. Eisenbeiss or some other members of our group if time permits.

In closing, I believe it goes without saying that I feel that this case represents a diagnosis of subarachnoid hemorrhage. If I am supposed to be more specific as to possible etiological factors, I would choose first the possibility of an aneurismal involvement of one of the vessels around the circle of Willis with syphilis to be considered in spite of the patient's denial of venereal infection and in spite of the apparent oversight of recording a serological report. However, these aneurisms for the most part, are considered to be on a congenital basis in the majority of cases.

DR. PHILIP E. RICE

This 52 year old man had a severe occipital headache starting suddenly four days before admission and gradually becoming more generalized and more severe. He had always been in excellent health except for a monthly migraine headache lasting 10 to 12 hours of many years standing. He is said to eat only one meal daily, but drank whiskey, beer and wine in astonishing amounts (10 bottles of wine daily in the winter and as much beer as he could get). There was no history of injury. His present headache began after supper and after going up and down stairs. He was nauseated almost immediately after onset of the headache. He felt feverish, sweated profusely, and was unable to eat, but did retain water. In spite of numerous doses of salts he had no bowel movement. Consciousness was not altered, but there was photophobia. Temperature was 101, respiration 28, pulse 56, blood pressure 150/75. Eye-grounds, reflexes and motion were normal. He had a rigid neck and positive Kernig; all other reflexes were present and normal. There was some tenderness in anterior part of head. Laboratory work was not remarkable except the spinal fluid which had a pressure of 230 millimeters of water, and contained gross blood, the differential cell count simulating the blood cell counts. He was treated with sedatives and daily spinal puncture showed a continued high pressure and a diminishing amount of blood in the fluid. Blood and spinal fluid cultures were negative. With-

in the week the patient apparently returned to normal, the last spinal fluid showing 130 red blood cells and 120 white blood cells.

It seems obvious that there was here some kind of a cerebral vascular accident which allowed blood to enter the cerebro-spinal fluid, and the headache was the result of a sudden increase in the intracranial pressure. This could have been brought about by the rupture of a small blood vessel, tumor, aneurysm or cyst. But the patient did not die nor did he become paralyzed. This leads us to subarachnoid hemorrhage.

Spontaneous subarachnoid hemorrhage is the nontraumatic extravasation of blood into the subarachnoid space. It is an episode in the course of an intracranial process and is not a disease entity. It is characterized, as a rule, by the sudden onset of severe headache, usually generalized, but most intense in the suboccipital or frontal region; vomiting; collapse, and coma in many instances. Stiffness of the neck then develops, and the patient may have other symptoms and signs due to pressure on adjacent structures. The commonest of these are pain on one side in the temporal or frontal region, double vision and drooping of one eyelid. These findings, of course are the result of pressure on the fifth and third cranial nerves. There may be mental changes or abnormalities in strength, coordination, reflexes, sensation or functions of other cranial nerves. On the other hand, there may be no focal neurological signs or symptoms at all. Nuchal rigidity, a positive Kernig sign and bloody cerebrospinal fluid are constant findings.

The cause of spontaneous subarachnoid hemorrhage is the rupture of an intracranial aneurysm, either saccular or arteriovenous, in the great majority of cases. In 1765, Biumi published the first report of a subarachnoid hemorrhage due to the rupture of an intracranial aneurysm. The aneurysm may be missed in a routine postmortem examination because, in the words of William Gull, who described this specific point in 1859, "Recent coagula may so imbed and conceal it that, unless strictly looked for, it will not be found for the sac is often small and thin and transparent." Intracranial aneurysms are the result of congenital defects in the arterial walls, oftenest in the circle of Willis, septic or sterile emboli, arteriosclerosis or a combination of congenital defects and arteriosclerosis. Subarachnoid hemorrhage from a brain tumor or from a sclerotic artery occurs infrequently, and the subarachnoid bleeding which sometimes occurs in blood dyscrasias, Hodgkin's disease, acute hemorrhagic encephalitis and acute glomerulonephritis is usually not great in amount.

Hemorrhage into the subarachnoid space may occur at any age, but it is commonest in the third, fourth, fifth and sixth decades of life. There is no significant sex difference. According to Martland, 2 percent of sudden deaths from natural causes are the result of spontaneous subarachnoid hemorrhage. Moritz and Zamcheck, in a series of 1,000 cases of sudden and unexpected death in young soldiers, found that 6.9 per cent were due to hemorrhage from a ruptured intracranial aneurysm.

Dekaban and McEachern selected 143 cases from the records of the Montreal Neurological Institute for analysis of the relation of spontaneous subarachnoid hemorrhage, intracerebral hemorrhage, and intracranial aneurysm. These cases were observed from 1938 to 1948. The criteria for selection were as follows: (1) The condition had to be proved by lumbar puncture, arteriogram, operation or autopsy. (2) The hemorrhage must have occurred within four days prior to admission. (3) The hemorrhage must not have been due to trauma. There were 30 cases of ruptured aneurysm, 8 cases of nonruptured intracranial aneurysm, 13 cases of abnormal arteriovenous communication, 1 case of subarachnoid hemorrhage with proved rupture of anatomically normal artery, 56 cases of subarachnoid hemorrhage of undetermined cause, and 35 cases of primary intracerebral hemorrhage. The authors stress that blood in the subarachnoid space in addition to raising the intracranial pressure, acts as an irritant, causing general systemic and local meningeal reactions. The latter, in some cases, are severe, with as many as 4,000 white blood cells per cubic millimeter of cerebrospinal fluid. Aseptic meningitis, or even constitutional fever, may be suspected wrongly in the mild cases unless lumbar puncture is carried out. The meninges show cellular infiltration and phagocytosis in the acute stage, followed later by patchy fibrosis. This distribution may explain the infrequent occurrence of hydrocephalus in surviving patients. Ruptured aneurysm was found to be responsible for the subarachnoid hemorrhage in nearly all cases in



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1. Slepyan, A. H. (1952), Arch. Dermat. & Syph., 65:228, February. 2. Slinger, W. N. and Hubbard, D. M. (1951), *ibid.*, 64:41, July. 3. Sauer, G. C. (1952), J. Missouri M. A., 49:911, November.

which autopsy was performed. Twenty-six of 30 ruptured aneurysms were of the congenital, berry type; the remaining 4 were fusiform and of arteriosclerotic origin. Because of the frequent occurrence of multiple and bilateral aneurysms, the necessity of bilateral angiography is stressed.

A migraine history is common in patients with subarachnoid hemorrhage. Most aneurysms are located along the middle or anterior cerebral arteries or the communicating branches of the circle of Willis. With healing, adhesions produce a pachymeningitis or an adhesive arachnitis. 60% recover from the first attack, yet recurrence is not unusual. The signs and symptoms of rupture of an aneurysm are well demonstrated in our case. We have nothing in this case to lead us to think of other intracranial lesions such as neoplasm, tuberculoma, abscess, etc., because the man was so well before onset of his cerebral hemorrhage (except for his migraine). Therefore my diagnosis can only be subarachnoid hemorrhage probably caused by rupture of a congenital intracranial aneurysm. If the man lived and was not operated on, I do not see how any other diagnosis can be proved anyway unless by arteriograms.

DIAGNOSIS: In this case there would seem to be but little difficulty in arriving at the following diagnosis:

1. Spontaneous subarachnoid hemorrhage, probably arising from rupture of a small aneurysm in or near the circle of Willis.
2. Migraine.
3. Obesity.
4. Presbyopia.
5. Faulty habits:
 (a) Inadequate diet
 (b) Potatorium

In the absence of any history of trauma, of chronic arterial hypertension, and of symptoms suggestive of brain tumor, hemorrhage into the subarachnoir space due (1) to injury of the skull and meninges from an accident, (2) to bleeding in a tumor with escape into the subarachnoid space and (3) to intracerebral apoplexy with passage of blood into the ventricles or subarachnoid space could be easily ruled out so that the diagnosis of so-called spontaneous subarachnoid hemorrhage had to be made. Moreover, the sudden onset, with severe headache, nausea and rigidity of the neck indicative of meningeal irritation were strongly suggestive, and the cerebrospinal fluid on lumbar puncture confirmed the diagnosis.

The fact that the patient suffered from migraine (monthly attacks) is of some interest, since some authors (especially Goldflam) have emphasized the possibility of subarachnoid hemorrhage of vasoneurotic origin, a point that I shall refer to later.

The Characteristic Symptomatology of Spontaneous Subarachnoid Hemorrhage

When a subarachnoid hemorrhage is not too large or profuse, it is followed by a series of symptoms and signs that are very characteristic and make the diagnosis certain. These may be summarized as follows:

1. A sudden onset, often with a feeling as though something had "snapped" in the head and followed by severe occipital pain which later tends to become generalized.

2. Nausea or vomiting almost immediately after onset.

3. Within a few hours marked rigidity of the muscles of the neck with positive Kernig and Brudzinski signs.

4. On cautious lumbar puncture, blood will be found evenly distributed throughout the fluid in each of three successive tubes.

If these four symptoms and signs are found, the diagnosis is very easy.

When the subarachnoid hemorrhage is greater, mental confusion, agitation or even coma, may quickly follow the onset, and with very large hemorrhages there may be compression of the medulla oblongata with disturbance of respiration, marked bradycardia, and marked rise in blood pressure.

Death sometimes occurs very quickly in large hemorrhages, but if death does not occur the larger hemorrhage will be followed by bradycardia, photophobia, often choking of the optic discs, sometimes nystagmus and anisocoria, and sometimes pyramidal tract symptoms with positive Babinski sign.

Within a few hours after subarachnoid hemorrhage the temperature begins to rise and slight fever continues for a time accompanied by polymorphonuclear leukocytosis. If later lumbar punctures are carefully done and the red cells are allowed to sediment, the clear supernatant fluid shows a definite fellow tinge (xan-

thochromia). The cerebrospinal fluid shows a greater number of white blood corpuscles that would correspond to the amount of blood present, indicating some inflammatory reaction on the part of the meninges. These findings in the cerebrospinal fluid in subarachnoid hemorrhage were so well described by Froin that but little has been added since he made his studies.

Attempts have been made to differentiate between subarachnoid hemorrhage from the anterior group of vessels (internal carotid, middle cerebral and anterior communicating arteries) and hemorrhages occurring in the posterior group (posterior communication arteries, posterior cerebrals, basilar artery, vertebral artery). In the former, pain in the ophthalmic division of the nervus trigeminus is prone to develop, along with weakness or paralysis of the eye muscles and sometimes with exophthalmos. In hemorrhage from the posterior group, one sometimes sees hemiplegia or paraplegia, dysarthria, or mild cerebellar symptoms, particularly when the basilar artery bleeds.

The small aneurysms that most often give rise to these subarachnoid hemorrhages are rarely large enough to produce symptoms before hemorrhage takes place. If they should be large enough, the symptoms are as a rule neighborhood symptoms due to mechanical pressure.

Treatment of Spontaneous Subarachnoid Hemorrhage

If the patient is seen within 24 hours after the onset of the first symptoms (severe pain in the head, nausea and vomiting, and stiffness of the neck), the question of lumbar puncture for examination of the cerebrospingal fluid at once arises for it is desirable to decide as early as possible whether a meningitis is present or whether we have to deal with intracranial hemorrhage (either subarachnoid or intracerebral). If there be subarachnoid hemorrhage there is always some danger in making a lumbar puncture during the first 24 hours, but if it be very cautiously done a little fluid sufficient for the making of the differential diagnosis can be withdrawn without danger. If the fluid is bloody in three separate portions we can be sure of subarachnoid hemorrhage. In milder cases one will be satisfied with this for the moment, keeping the patient at rest in bed with the head elevated and administering sedatives for the pain. If the blood pressure be high, the withdrawal of from 300 to 500 c.c. of blood from a vein at the bend of the elbow would be indicated.

In severer cases in which a comatose condition develops quickly after onset or in which there are symptoms of compression of the medulla or pons indicating a larger outflow of blood, it may be necessary either to withdraw more fluid by the lumbar route or, perhaps better, by means of cisternal puncture as a life-saving measure, being cautious, however, not to reduce the pressure to below half the initial figure. In a few cases of severe hemorrhage, surgeons have ligated one internal carotid artery.

After the first 24 hours, cautious lumbar puncture may be done once or twice in the 24 hours with removal of relatively small amounts (3 to 5 c.c.) of fluid, for the relief of the pain in the head and to help in drawing off the blood from the cisternal area. Some are strongly opposed to therapeutic repetition of lumbar punctures, thinking that the value of these punctures has been over-rated and maintaining that Nature does just as well without interference, or even better. Borok goes so far as to say that lumbar puncture in the treatment of subarachnoid hemorrhage is "absolutely contraindicated"; even for diagnosis he rejects it unless the clinical examination alone will not establish it, in which event he insists upon limiting the amount of cerebrospinal fluid withdrawn to 1 or 2 c.c. In our experience here, though in some cases a single lumbar puncture may suffice, in others repetition of lumbar puncture has been helpful in treatment provided the precautions mentioned have been observed.

After the acute symptoms have passed, the patient should be kept quietly in bed for at least eight weeks to permit of repair of the vessel wall, after which he may be allowed in a chair for an hour the first day, two hours the second day, and three hours the third day; then he may be allowed to walk about a little, avoiding, however, any sudden physical exertion and strong emotion. And since subarachnoid hemorrhage is prone to recur in patients who have had one attack, the mode of life should be carefully regulated ever afterward. The patient's habits should be definitely prescribed, with avoidance of any excess of alcohol or tobacco. Constipation with straining at stool should be guarded against. The prognosis is relatively good, however, and more than 50 per cent of the cases recover if treated in the way mentioned.

The PRESIDENT'S *Page*

HEALTH INSURANCE COVERAGE

AS PHYSICIANS WE ARE OFTEN ASKED WHAT COMPANY PROVIDES THE BEST HEALTH COVERAGE, AND ARE AMONG THE FIRST TO HEAR COMPLAINTS ABOUT "INADEQUATE COVERAGE". A GOOD COMPREHENSIVE ANALYSIS OF THE PROBLEM APPEARED IN THE DECEMBER 1953 ISSUE OF "CHANGING TIMES" (KIPLINGER) WHICH WE SHOULD ALL READ.

ABSTRACTED BRIEFLY, THE COST OF COMPLETE MEDICAL COVERAGE WOULD BE PROHIBITIVE. THE MINOR ILLNESSES AND ACCIDENTS ARE PREDICTABLE ANNUAL EXPENSES WHICH DO NOT GREATLY DISTURB THE FAMILY BUDGET, BUT CONSTITUTE THE GREATEST UTILIZATION. HEALTH AND ACCIDENT INSURANCE SHOULD COVER PRIMARILY THE UNPREDICTABLE ILLNESSES WHICH ENTAIL LARGE HOSPITAL BILLS AND SURGICAL FEES, AND FOR THE WAGE EARNER LOST WAGES. IDEALLY, THE WAGE EARNER SHOULD HAVE A COMBINATION OF POLICIES WHICH (1) PROVIDE AN ESTATE IN CASE OF DEATH, (2) INCOME FOR ANY PERIOD OF PROLONGED DISABILITY, AND (3) FAMILY PROTECTION OF ADEQUATE HOSPITAL AND MEDICAL CARE WHEN ILL OR DISABLED.

SOME COMPANIES HAVE WITHIN RECENT YEARS INTRODUCED A "DEDUCTIBLE" TYPE OF POLICY WHICH IS RELATIVELY INEXPENSIVE. IN THIS THE INSURED GAMBLES UP TO SOME FIGURE HE CAN AFFORD, SAY $250, AND THE COMPANY PAYS ALL EXPENSES OVER THAT SUM UP TO A MAXIMUM OF PERHAPS $5,000. THIS DEDUCTIBLE FEATURE IS BEING ADDED TO OTHER POLICIES, AND WOULD SEEM AS WORTH WHILE APPLIED TO BLUE CROSS-BLUE SHIELD AS WELL AS TO PRIVATE INSURERS. FEWER CASES WOULD GO TO THE HOSPITAL SOLELY FOR A WORK-UP AND LESS DETECTIVE WORK NEEDED IF THE FIRST TWO DAYS WERE "DEDUCTIBLE". THE DEDUCTIBLE FEATURE MIGHT BE ADDED TO BLUE SHIELD IN MANY WAYS, SUCH AS TO PERMIT THE INCLUSION OF THE MORE COSTLY DIAGNOSTIC PROCEDURES WHICH ARE NOT NOW ALLOWED. EVENTUAL ACTUARIAL EXPERIENCE MIGHT PERMIT MORE EXTENSIVE COVERAGE FOR UNPREDICTABLE MEDICAL ILLNESSES, AND OFFICE DIAGNOSIS AND TREATMENT ON A DEDUCTIBLE BASIS.

WE SHOULD NOT BE DISCOURAGED BY THE PRESENT SEEMING INADEQUACIES. VOLUNTARY HEALTH IINSURANCE PROGRAMS HAVE GROWN TOO FAST FOR REALISTIC EVALUATION TO KEEP PACE.

EDWARD M. HAYDEN, M.D.
President, Arizona Medical Association, Inc.

Editorial

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The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.
2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. (See MEDICAL WRITING by Morris Fishbein.)
3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.
4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.
5. Submit manuscript typewritten and double-spaced.
6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.

The Editor is always ready, willing, and happy to help in any way possible.

ARE YOU GUILTY?

For twenty years, we have seen a favorable attitude of our patients (the public) towards us as physicians gradually fade to a dangerously low level of doubtful suspicion and antagonism. This loss of respect and confidence was prominent during the attempt of the past administration to socialize medicine. The foundation of this proposed socialism was composed of stones of class hatred, false data and unfounded accusations. A warped picture of the state of the nation's health was painted for us and impossible promises of means for its correction given. This was a carefully laid plan to "suck-the-public-in" and pave the way for a more complete socialism of our entire system of government.

Yes! Under pressure and almost too late we got busy with antisocialism propaganda and were successful in at least blocking flagrant socialistic legislation. We were successful in at least delaying socialism but did we accomplish that which was probably more important, namely, the regaining of the wholesome respect of our citizens? The answer is "No," as evidenced by the increasing number of inflammatory articles which are appearing regularly in our most popular magazines.

Before 1953 we blamed the socialistic planners for most of these derogatory outbursts in our press but even now that the planners have been "subdued" we find that the tirades of the press are more numerous and more vitriolic. Recently in one week our newsstands contained four magazines all featuring articles exaggerating our shortcomings and by implication condemning the whole medical profession.

Among the most shameful and pointed was the editorial in LIFE magazine, "Watch It, Doc!" and the coverpage painting of COLLIER'S with the caption, "Why Some Doctors Should Be In Jail," to say nothing of the text of the article itself. We have openly admitted that a small percentage of our doctors, say one to two per cent, do err and are guilty of these accusations in hopes that these writers would see fit to exempt the 98 per cent whom we feel to be ethical and good. However, the onslaught continues.

Some place, somewhere, we as a profession must be guilty of failing to offset these most saleable stories because the public determines the saleability of feature articles. The public is being told that we are mercenary money-grabbers without interest or sympathy for our patients and that we have discarded our Hippocratic oath for one based on commercial selfishness. It is the belief of some that our guilt lies chiefly in our failure to disseminate pertinent information.

Ask yourselves the following questions and many more:

Have I informed the public that medical eare is cheaper today than ever before? Have I explained that the cost for hospitalization for each disease or illness is no greater today than it has ever been? Have I shown them that they recover quicker and go back to work, having lost mueh less income because of illness? Have I sited that the per day cost in the hospital is higher because we take advantage of these lifesaving and timesaving advanees in medicine? Have I impressed upon them that they now stay in the hospital less than eight days as compared to three weeks previously?

Have I told many patients that a workingman's dollar buys more medical care than ever before and that he works fewer hours to buy a superior brand of medicine? Have I emphasized that, during the period in which wages have risen 160%, the serviees of the physician have gone up only 40%? Have I set forth that the doctor himself gets only 28% of their medical dollar and that this is less than ever before? Have I troubled to explain how their medical dollar is distributed?

Have I adequately explained fees, fee splitters, ete.? Since we have been dubbed a "Cadillae class," have I explained that a doetor's Cadillae is not an index to his wealth but that he can afford one only because of the tax deduetions allowable as a business expense?

Have I ever related stories to them regarding the service whieh doetors render, their charities, their unselfish giving of time and money, and of the distractions wrought by an often inconsiderate public?

The public has beeome intolerant of doctors chiefly because of that which they read in magazines and not beeause of personal experienees.

Have you kept yourself informed as to the changing economics, espeeially as they are related to medicine? Have you been too busy to read the excellent publications of the Bureau of Medieal Economic Research of the A.M.A., so capably directed by Frank G. Dickinson? The answer is that you have not. I base this statement upon inquiries made to many of you regarding these subjects.

You may try to shift the blame onto your A.M.A. for our poor public relations but they can only be blamed insofar as they have failed to devise ways and means to instill the proper information, of which they have mueh, into us for dissemination to the public.

Let me ask you — Have you seen or read the publication, "Your Money's Worth in Health," an A.M.A. publieation? This same question was asked recently at a meeting of those whom you elected to run your state medical soeiety and not a single man eould say that he had ever even heard of this booklet. Let me assure you that this pamphlet is a most excellent presentation and, if properly disseminated, would do much to improve and offset heretofore false impressions.

If we as physieians are not informed, how can the publie formulate balanced opinions and attitudes? There are many hidden faets of which the public is entirely unawarc. As long as they do not know the whole truth, they will eontinue to base their opinion on partial truths and lies.

So the question is, "Are you guilty of failing to inform yourself and your elients, not only about medieal eeonomies, but about our training, our serviees, the gains they have obtained in health and longevity and, yes, even about our trials and tribulations? If we do not trouble ourselves to do these things, we will continue to be damned.

—L.B.S.

LETTER TO THE EDITOR

Opinions expressed in Dr. Osler's column are his own and not necessarily those of Arizona Medicine.

Therefore to encourage free expression our editorial privilege of censorship is seldom invoked.

Congratulations as well as criticism are appreciated. We think with more frequent reading you'll find more good things in Arizona Medicine.

Ed.

November 18, 1953

R. Lee Foster, M.D., Editor-in-Chief
Arizona Medicine
Arizona Medical Association, Ine.
Security Building
Phoenix, Arizona

Re: Topics of Current Medical Interest
By. Guillermo Osler, M.D.
Arizona Medicine
Vol. 10, No. 11, Year 1953

Dear Lee:

I must plead guilty to seldom reading Arizona Medicine. However, in thumbing through the

current issue, received at my home, I was amazed to find a full page in bold faced type "Tuberculosis Problem in Arizona." This report, together with the President's page, was indeed pleasing to those of us interested in the control of tuberculosis. My congratulations.

Your editorial stated "practically everyone reads Dr. Guillermo Osler's column." I proceeded to do likewise. I have no idea whose literary effort this represents. The two slighting references to pneumoperitoneum (pp. 410 and 412) fail to be amusing, particularly in view of Dr. Farness' article.

Chest physicians and surgeons are cognizant of the inept treatment generally offered those suffering from tuberculosis. This is particularly true of the general use of specific chemotherapeutics. Pneumoperitoneum is not a discredited procedure. Because of your stated high reader interest, presumably physicians clinically mishandling those suffering from pulmonary tuberculosis will feel further justified in their present management, as temporary collapse procedures are being discredited by Guillermo.

I would urge some degree of editorial censorship of such columns.

Sincerely yours,
Lloyd K. Swasey, M.D.
Phoenix, Arizona

LKS:gf

American College of Chest Physicians

The Council of Postgraduate Medical Education of the American College of Chest Physicians, in cooperation with the respective state chapters of the College as well as the staffs and faculties of the local hospitals and medical schools, will sponsor the Second Regional Postgraduate Course on Diseases of the Chest in New Orleans, Louisiana, February 15-19, 1954 and the Seventh Annual Postgraduate Course on Diseases of the Chest to be held at the Bellevue-Stratford Hotel, Philadelphia, Pennsylvania, March 15-19, 1954.

These postgraduate courses endeavor to bring physicians up to date on recent advancements in the diagnosis and treatment of heart and lung disease. Tuition for each course is $75.

Further information may be secured by writing to the Executive Director, American College of Chest Physicians, 112 Each Chestnut Street, Chicago 11, Illinois.



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Arizona Pharmaceutical Page

A ONE-ACT PLAY

SCENE - BUS IN ANY LARGE CITY

(Mrs. Brown with her small son, boards the bus. She sees her friend, Mrs. White who moves over and makes room for her.)

MRS. WHITE —Well, fancy seeing you here! Been doing your shopping?

MRS. BROWN —Heavens, no. We've been to see the doctor.

MRS. WHITE —That's Too bad. What seems to be wrong with you?

MRS. BROWN —It isn't with me, but Jimmy. He has a very peculiar growth under his right arm.

MRS. WHITE —What did the doctor say about it?

MRS. BROWN —He says he can't quite figure it out; but he feels fairly certain its due to a glandular condition.

MRS. WHITE —Will he have to operate?

MRS. BROWN —Well, he says he won't. He gave me some pills to give Jimmy, but I don't feel satisfied about the whole affair.

MRS. WHITE —Why? What seems to be the difficulty?

MRS. BROWN —The other night, Jimmy complained his arm hurt. When he showed me the growth, I couldn't make out what it was so I took him to the corner drug store. Mr. Smith, the pharmacist, has been a friend of ours for years and we use him as a neighborhood encyclopedia. He's a wonderful man. I had Jimmy take his shirt off and show the growth to Mr. Smith.

MRS. WHITE —What did he advise you to do?

MRS. BROWN —He looked at it very carefully, then told me I should take Jimmy to see a physician. He explained that such growths could be caused by many different conditions in the body, and only a skilled physician should try to diagnose the case and then his instructions should be followed faithfully. He explained that diagnosis is very important and only physicians are trained for that particular purpose. He told me the pharmacist's job is to compound and dispense the needed medicine prescribed by the physician.

MRS. WHITE —That all sounds very logical. Why should you be worried?

MRS. BROWN —It seems odd that the physician Mr. Smith recommended so highly didn't write a prescription and send me to an expert, such as Mr. Smith, to have it filled. He merely called his office girl, asked for some pills out of a certain bottle and told me to have Jimmy take one of them three times a day.

MRS. WHITE —Well, maybe he gave them to you cheaper than the pharmacist.

MRS. BROWN —Price is not what I'm interested in right now. I want to be certain Jimmy is getting what he should have, and I intend to throw these pills away and go to a doctor who specializes in diagnosis and prescribing and who'll then send the prescription to be compounded and dispensed by a man who's been trained for that purpose.

MRS. WHITE —In other words, you believe in ethics both ways.

MRS. BROWN —That's right. Oh, this is my corner! Come on, Jimmy. Goodbye, Mrs. White!

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TOPICS OF *Current Medical* INTEREST

RX., DX., AND DRS.

By GUILLERMO OSLER, M.D.

After a plethora of paragraphs on chest diseases last month, this current column will have none. . . . No complaints; just a better balance.

J. G. Allen, professor of surgery at the U. of Chicago, tells how to CONTROL HOMOLOGOUS SERUM JAUNDICE from pooled human plasma. (If that statement hasn't caught your attention, it has MINE). . . . The expedient is simple: The plasma is stored at room temperature for 6 months or longer. The viruses are thus attenuated or inactivated. . . . The current methods of production and use are actually perfect for PRESERVATION of the virus, Dr. Allen says (at the American Hospital Ass'n. meeting).

Carl Walter of Harvard, whom we have quoted in the past for his work on BLOOD TRANSFUSIONS, has again summarized the causes for failure to get enough blood into the patient (also before the A.H.A.). This time he says it even better. . . . 1. The surgeon may not realize the amount of blood lost (and needed). Most routine operations result in a 10% loss, and it may reach 30%. Loss may be rapid, and replacement must be fast. . . . 2. The average calibre needle is not large enough. A 17-gauge needle is essential. . . . 3. Stoppages and slow-downs are usually the result of faulty recipient sets. He advises a large-lumen coupler, free filtration, and a metering device which allows a check on the flow.

Next time your wife tells you that a physician shouldn't be wasting his time on those crude, non-medical SPORTS PAGES, quote this one to her. . . . The Los Angeles Times had this medical note as a headline after the last Saturday of the season, — "RICE POLISHED. GIVES BAYLOR BERI-BERI BAD TIME!"

Apparently you are more eligible for successful chemotherapy if you don't work in a hospital or even go there. The general population has a low incidence of RESISTANT BACTERIAL STRAINS, but the hospital employees (and even chronic patients) have an incidence of 40 to 75 per cent. . . . This seems to obtain with each new drug, since tests of strains from the respiratory tract of hospital personnel since the advent of erythromycin have shown 75% of one 'closed group' to be resistant. . . . No specific panacea, either. One can only limit the use of the drug to strict indications, use it early and completely, and thus limit the spread of infection.

New ANTIBIOTIC NAMES, still in the 'starlet' class, may someday be up in the lights. They are worth a mention, pending more extensive trial, — Tetracycline (Pfizer, Lederle); Streptogramin (Merck, by way of Sharp and Dohme); Ruticin (same); Hygromycin (Lilly); Puromycin (Lederle); Methymycin (Squibb). . . . You'll know how they develop by their publicity, same like Hollywood stars.

The Pfizer 'Antibiotics Newsletter' reported the work of Chamovitz and Catanzaro on the use "one-shot" D BED PENICILLIN FOR STREP PHARYNGITIS. It was successful in preventing complications and in inhibiting antistreptolysin formation. . . . It seemed that this kind of report might be enough to widen the use of penicillin even farther, with its attendant hazard of allergy to subsequent usage. A note to Dr. Chamovitz at Warren Air Force Base in Wyoming brought the reply that allergy is not less with the DBED preparation. . . . Ergo, use it only when strictly indicated.

At a recent Antibiotics Symposium, federally sponsored, the Chairman stated that "ANTIBIOTICS account for more than one-half of all prescriptions."

Do some of your juvenile patients have unexplained tantrums, or 'dull' spells, or apprehensions Or do you have one in your family with such troubles? . . . Schaffer has reported that behavior symptoms may result in some children from use of the ANTIHISTAMINE DRUGS, with the signs and symptoms mentioned above.

Some very ODD PUBLICATIONS are among the dozens which come to this department. They include the strictly medical; the semi-medical; the pseudo-medical; the non-medical; the non-medical tho scientific; the extra-medical; etc. . . . One new to our ken just arrived, the 'American Naturopath'. It brings to light a problem of which we may not be aware. . . . Many states either do not recognize naturopaths, or justifiably give them a low and restricted classification. Many naturopaths do not have a naturopath 'degree', tho they have equivalent qualifications. They don't like it, of course. . . . We should be aware of these sub-species, while avoiding the sin of condescention.

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Florida has given the naturopaths a wallop on the chin (and a kick in the pocketbook). Their state supreme court reversed a 1947 ruling which gave them the right to prescribe and administer narcotics and other drugs. . . . Hooray for Florida! They never should have allowed the right, but it takes more 'doing' to reverse it than to prevent it.

The new St. Joseph's Hospital in Phoenix has been publicized in several places, most recently in the J.A.M.A. Ten operating rooms, 4 recovery rooms, 325 beds with individual oxygen supply; special departments of physical medicine and rehabilitation; nursing and technology schools; cost of 6 million dollars. . . . This sounds good for Phoenix, and what's good for Phoenix is good for Arizona.

What TOTAL TIME does a man spend during his life on various habits, procedures, and physiological functions? Perhaps you can save your patients many years of time by noting the computations of a University of Wisconsin psychology class. . . . A man 70 years of age has spent 20 years working, 5 years shaving and dressing, 2½ years smoking and chewing gum, 2½ years eating, and 3 years waiting for people to arrive. He has used the telephone for a solid year (tho it doesn't give figures for a woman). He has engaged in walking and outdoor sports for seven years, and the same time at movies or other amusements. . . . Look how you could find time for other things if you stopped walking, waiting and shaving!

Vital Vital Statistics, — Dr. Stirling Pillsbury of Long Beach, California, reports THE OBSTETRICS SUCCESS of the Seaside Memorial Hospital. They had 14,501 births between 1945 and 1953; the average maternal death rate in the United States for such a group would be 18.7 deaths; the Seaside rate was zero — repeat — zero.

FACIAL BLEMISHES may now be completely hidden by a preparation called 'Covermark'. It covers areas as small and transient as a pimple and as large and permanent as a birthmark, scar, or vitiligo patch. . . . The material is in stick form, and a completely waterproof type may be had. . . . It is made to match skin colors, and cosmetics may be applied to it. . . . A Miss (not Dr.) O'Leary of New York produces it.

An M.D. from West Virginia DENIES that Social Security can be called OLD-AGE INSURANCE. . . . It violates two insurance principles. No matter how much the individual contributes, he can't collect unless his income is below a certain figure. The premiums paid are so small that it is not possible to build up a reserve to make the program self-sustaining. . . . It could be added that an insurance company would likely be forced to put its finger on its assets.

A is for Alvarez, — Dr. A. quotes the reports which impressed him at the 1953 Am. Soc. of Clin. Investigation, probably greatest of the research groups. . . . CHOLESTEROL added to a rabbit's diet increased the blood level 27 times, and when CORTISONE was also added the level increased 82 times. . . . A new THYROID EXTRACT is more powerful than thyroxine, and has an IMMEDIATE effect in thyroid deficiencies. . . . Four 'COLD' VIRUSES have been found which will produce the infection in humans after many egg-culture transfers. . . . HIGH PROTEIN INTAKE during infectious liver disease results in much quicker improvement. . . . Cortisone for RHEUMATIC FEVER has again been found to prevent permanent injury to the heart. . . . NITROGEN MUSTARD has a good effect on rheumatoid arthritis. . . . POLIO VIRUS has been found in the blood of several children with minor illnesses during a polio epidemic. . . . It has been shown that if the BLOOD CALCIUM LEVEL of a woman with CANCER OF THE BREAST varies during her menstrual cycle she is more likely to respond to mastectomy than if it is stable.

THIS NOTE IS FOR THE DOCTOR WHO DOESN'T LIKE JOKES ABOUT PNEUMOPERITONEUM. . . . It is sad that he doesn't read ARIZONA MEDICINE regularly; we'd be glad if he did. It is an excellent state medical journal. . . . As for G. Osler's column, it contains topical items on therapy, diagnosis, methods, people, medical people, et al. It is larded with small scoops, warnings, slang, nudges, congratulations, humor, and attempted humor. It is fun to write it, and we were hugely pleased to see the Editor's note that lots of people read it. . . . As for TB control, Joe Farness wrote a fine page. This column has beaten that same drum quite often, in the past six years, mentioning Arizona needs, progress, new methods, therapy, etc. etc. It's all needed. . . . As for pneumoperitoneum, it just happened that two paragraphs accumulated which gently ribbed the procedure. There have also been jokes about Florida, cats, a medical meeting, two well-known surgeons, etc. (and, in the case of the surgeons at least, they loved it). . . . This Osler uses pneumoperitoneum in selected cases, but with certain definite restrictions and limitations. Others do not. We can pass along two pieces of information on PNP which are LESS favorable than the two jokes,—1. Two well-known Los Angeles Sanatoria use pneumoperitoneum on only 5 and 9 per cent of their patients. 2. A report from the famous Pembine Therapy Conference (Michigan, Wisconsin, and Minnesota) for September 1953 says as follows,— "A case with a previous pneumoperitoneum was presented. A few (sanatoria) are still using this method of treatment but it was agreed by most physicians in attendance that it should seldem if ever be used." Also, fifty consecutive cases were presented from each of four sanatoria. The Michigan San. started 3 PNP among their fifty; the Wisconsin and Minne-

sota Sans had none at all; and the guest San (Firland of Seattle) had eleven, which were used to 'minimize the extend of resection' in extensive acute bilateral disease with cavitation, but only while the indications persisted. . . . Data like these help give a wider perspective.

DELEGATES REPORT
AMERICAN MEDICAL ASSOCIATION
Seventh Annual Clinical Meeting
December 1-4, 1953
St. Louis, Missouri

The House of Delegates of the American Medical Association, meeting at the Jefferson Hotel in St. Louis during the Seventh Annual Clinical Session took important policy actions on social security, voluntary health insurance, medical ethics and unethical practices, medical education, hospital accreditation, military affairs and a wide variety of subjects affecting both physicians and the public.

Highlight of the opening House session on Tuesday was the announcement that Dr. Joseph I. Greenwell of New Haven, Kentucky, had been selected by a special committee of the A.M.A. Board of Trustees as the 1953 "General Practitioner of the Year." The annual medal and citation for community service by a family physician were presented to Dr. Greenwell by Dr. Edward J. McCormick of Toledo, Ohio, President of the American Medical Association who also addressed the opening session.

The Tuesday program also included addresses by Dr. James R. Reuling of Bayside, New York, Speaker of the House of Delegates, and Dr. Chester Keefer of Boston, Special Assistant to Mrs. Oveta Culp Hobby, United States Secretary of Health, Education and Welfare. Annual reports were presented by Dr. George F. Lull, Secretary and General Manager of the A.M.A.; Dr. Dwight H. Murray of Napa, Calif.; Chairman of the Board of Trustees, and by the standing and special committes of the House of Delegates.

Approving a recommendation by its Reference Committee on Legislation and Public Relations, the House passed a resolution reaffirming its opposition to the compulsory coverage of physicians under the Old Age and Survivors Insurance provisions of the Social Security Act and advocating passage of the Jenkins-Keogh bills now pending in Congress. These bills were described as providing for "the development of a voluntary pension program which is equitable, free from compulsion, and satisfies the retirement needs of physicians."

The reference committee report adopted by the House said:

"The purpose of these bills is to eliminate the discrimination, and inequities which exist under present tax laws by extending the tax deferment privilege to the country's ten million self-employed and also to millions of employees who are not covered by pension plans. The purpose of the resolution is to reaffirm our support of the voluntary pension program provided in the Jenkins-Keogh bills and to reaffirm our strong opposition to the extension of compulsory coverage of physicians and other self-employed persons under Title II of the Social Security Act."

The same committee report urged continued action to obtain passage of the Bricker Amendment (S.J. Res. 1) and approved the principle of legislation which would reduce or remove the limitation on the deduction of medical and dental expenses for income tax purposes. It also opposed any further extension of the "Doctor Draft" Law beyond the present expiration date of June 30, 1955.

The report said that "your Committee feels strongly that there should be no further extension of the 'Doctor Draft' Law. We feel that the legislation is discriminatory and urge the Committee on Legislation and the Board of Trustees to actively oppose any further extension."

The House acted to accelerate the development of voluntary health insurance by passing a resolution requesting the Council on Medical Service to proceed immediately with a special study of the problems of catastrophic coverage and coverage for retired persons. The Council was asked to present its findings and recommendations to the House not later than the 1954 Clinical Meeting. The resolution pointed out:

"There are two large groups of citizens for whom improved coverage could be offered under present prepaid medical care plans, namely: (a) those individuals who suffer catastrophic or long-continued and highly expensive illness and whose financial resources are not adequate to meet the cost thereof and (b) those citizens who have retired and are living on small incomes and who are not eligible under presently existing public or private plans."

The resolution emphasized the medical profession's "responsibility to make every effort to

promote such prepaid medical coverage for all citizens whose circumstances make them eligible."

Another resolution on voluntary health insurance, adjudged to be emergency business by the Reference Committee on Insurance and Medical Service and then passed by the House, stated that "the American Medical Association condemns all insurance contracts which classify any medical service as a hospital service." The resolution reaffirmed previous actions of the House defining pathology, radiology, anesthesiology and physiatry as medical services.

A secondary emergency resolution, which would have endorsed the principle of federally subsidized scholarships for prospective military personnel in order to encourage the building up of a career-basis medical corps for the armed forces, was referred by the House to the Board of Trustees for study and action.

A resolution introduced by the Iowa State Medical Society, calling for approval of a joint-billing procedure involving services rendered by two or more physicians, was referred to the Judicial Council, at the suggestion of the Reference Committee on Miscellaneous Business, with the recommendation "that the Judicial Council investigate the factors involved in the matter as presented and determine if there are new factors or new facets that would cause it to change the opinion" determined in 1952.

The House approved a revision of one section of the Principles of Medical Ethics of the A.M.A. which clarifies the relationship of physicians to all forms of public information media. The revision had been worked out by the Council on Constitution and Bylaws.

In an effort to solve the publicity problems resulting from unethical practices by a small minority of doctors, the House referred to the Board of Trustees a resolution calling for appointment of a special committee with broad professional representation to study all aspects of the problem. The Board was asked to study and implement the intent of the resolution and to report its findings to the House at the June, 1954, meeting in San Francisco.

To clarify misunderstandings among physicians regarding the rules and regulations of the Joint Commission on Accreditation of Hospitals, especially as they concern the role of the Department of General Practice in a hospital, the House adopted the following resolution:

"That this House of Delegates of the American Medical Association request the Joint Commission on Accreditation of Hospitals to publish an article, or series of articles, in the Journal of the American Medical Association and other official publications circulating among the medical and hospital professions, to acquaint the medical-hospital profession with the regulations, bylaws and their interpretations, and

"That the Commission clarify the methods by which an aggrieved hospital or its staff may appeal a decision with which they are not in agreement."

In the field of medical education the House was "pleased to note" that a fourth grant of $500,000 had been made by the American Medical Association to the American Medical Education Foundation for financial aid to the nation's medical schools. The Foundation reported that its 1953 income now totals $1,174,000 and that the number of contributors now is more than double the total in 1952.

Dr. Louis H. Bauer, of New York, immediate past president of the A.M.A., was elected president of the Foundation just prior to the opening of the A.M.A. Clinical Session. He succeeds the late Dr. Elmer L. Henderson of Louisville, also an A.M.A. past president.

At the opening session of the House, Dr. McCormick in his presidential address made a strong appeal to the nation's physicians for "action that will further the full confidence of the public in our profession."

"Good public opinion cannot be bought," he declared. "It must be earned through exemplary conduct and genuine service in the public interest. Whatever money the A.M.A. and its constituent societies spend for public education and public relations is wasted unless individual physicians take wholehearted interest in assuring the success of these ventures."

Dr. Reuling, emphasizing that much serious work remains to be done, warned that "times are just as troubled as when we had blanket bills before Congress which would have socialized the practice of medicine."

Dr. Keefer told the House that "the voluntary way has been the most successful in the past and there is so reason to believe it will not continue to be in the future." He urged maximum effort, cooperation and leadership on the community level.

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Goldberger award for outstanding contributions in the field of clinical nutrition was presented to Dr. James Somerville McLester of Birmingham, Alabama, a practicing physician for more than 50 years. The award was presented by the A.M.A. through its Council on Foods and Nutrition.

Final registration at the St. Louis Clinical Session was expected to total approximately 7,500, including about 2,700 physicians.

Respectfully submitted
J. D. HAMER, M.D. Phoenix, Arizona

Report On Sixth Annual Public Relations Conference American Medical Association St. Louis

Your Executive Secretary was privileged to attend the Seventh Annual Clinical Meeting of the AMA held in St. Louis December 1 through 4, 1953. Following is a brief report on the Sixth Medical Public Relations Conference held Sunday, November 30th, at the headquarters Hotel Jefferson, preceding the Clinical Session.

More than 300 physicians and medical society public relations personnel were in attendance. Dr. Walter B. Martin of Norfolk, Virginia, President-Elect, delivering the keynote address on "Facing Up to PR Facts," described medical public relations "not as a means of putting ourselves in a better light before the public but as a way by which we can learn better how to serve the public. If our judgment is given honestly and fearlessly for the common good, it should and will carry weight. If it is founded on ignorance or colored by self-interest, it will be disregarded."

A panel discussion followed on "'Making A PR Program Work." Four medical doctors, representing officers and especially public relations committee chairmen of local societies, participated, giving excellent examples of how their respective groups initiated new approaches to the public relations problem, the projects generally following those suggested through the years by the AMA.

Leo H. Bartemeier, M.D., of Detroit, Chairman of the AMA Committee on Mental Health, delivered a thought-provoking address on "What Motivates the Public's Feelings Toward Medicine." Failure to understand what motivates patients tends to alienate them from physicians. He urged doctors to try to understand such basic motives as fear and a feeling of insecurity. The afternoon session was highlighted by two outstanding addresses, one delivered by Howard W. Bennett of New York, Manager, Economic Education, Plant Community Relations Division, General Electric Company; and the other by Roger Fleming of Washington, D. C., Secretary-Treasurer of the American Farm Bureau Federation. "Selling Our Economic System" was the theme of their deliveries. Americans can and should be proud of accomplishments through the years under our economic system, and instead of continually being on the defensive, it is time we all "speak out" in support of it, challenging anyone anytime to match its achievements under any other system — and this includes the practice of medicine.

Emphasis was placed on (1) the value of a public relations survey to determine criticisms of the people of a community; (2) emergency call systems; (3) providing medical care for all regardless of ability to pay; ((4) distribution of posters and appropriate ethical advertising; (5) continuance of radio and television programs; (6) establishment of health programs; and (7) making full use of the valuable services of the Woman's Auxiliaries.

Dr. Edward T. McCormick, President of the American Medical Association, in his address before the House at its opening session, made a strong appeal to the nation's physicians for "action that will further the full confidence of the public in our profession. Good public opinion cannot be bought. It must be earned through exemplary conduct and genuine service in the public interest. Whatever money the AMA and its constituent societies spend for public education and public relations is wasted unless individual physicians take a wholehearted interest in assuring the success of these ventures.

Respectfully submitted, Robert Carpenter
Executive Secretary, Arizona Medical Ass'n., Inc.

Good Reading In Journals You Do Not Usually See

Arizona Medicine receives in exchange about sixty medical journals, including all the state journals, and many foreign journals. These are regularly placed in the Maricopa County Library, for the benefit of any doctors who desire to read them there, or borrow them.

The Professional Board

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Joseph M. Kinkade, M.D.
Tucson, Arizona

The past decade has seen a vast improvement in the education of the deaf child in Arizona. This progress has been brought about through the combined efforts of our Arizona State Medical Association, county medical societies, the State Department of Health, state and local departments of education, and school nurses and physicians. The program has been financed by the National Society for Crippled Children and Adults (the Easter Seal society), the State of Arizona, state and local departments of education,, and the Moose Lodge.

Available to the deaf child, in several of our cities, are periodic audiometric examinations, otological clinics, counseling by the school nurses and doctors, and referral to private or clinic doctors. These children may also have the services of the school psychologists, and mental health clinics, as well as training in speech therapy.

In the Phoenix area, there is an excellent pre-school for the deaf child — one of two west of the Mississippi. In the Tucson area, consultation service for parents is provided through the Department of Special Education of the public school system. At the present time, a private pre-school is in the process of organization.

On the state level, The Arizona State School for the Deaf and Blind, located in Tucson, is available for children with auditory handicaps which impair their normal progress in the public schools. This schooling is free to children residing in Arizona, and provides a public school education from grade one through high school, as well as the specialized training so essential to the deaf child.

This school, with a total staff of seventy-two, has an enrollment of over fifty visually handicapped, and over one hundred twenty-five aurally handicapped children. It offers both academic and vocational courses, plus full athletic, scouting, club and social programs. About twenty-five per cent of the graduates attend colleges.

In the department for the deaf, the oral method of instruction is used. Language development, speech, and speech reading are emphasized, as are the training and utilization of residual hearing. About sixty per cent of the children use individual or group hearing aids.

Due to the limited number, and unequal distribution of, otologists, it has been impossible to organize conservation of hearing centers in each of our fourteen counties; but our otologists have gone into these areas and conducted otological clinics, and have familiarized the general practitioners in these localities with the organized program available in the larger cities, to which they may refer their aurally handicapped patients.

We are hoping that, in the not too distant future, we may have a hearing aid clinic. This should be incorporated in the Department of Speech at one of our institutions of higher education, or at the Arizona State School for the Deaf and Blind. Our next aim is to help promote a resident pre-school at the State School.

A Conservation of Hearing program is given at the annual meeting of the Arizona Medical Association each year. This program is planned to interest all people — lay and professional alike — who are concerned with the deaf child, his problems and opportunities.

Woman's AUXILIARY



Mrs. Brick P. Storts
Tucson, Arizona



Mrs. Geo. Enfield, State President, Woman's Auxiliary and Mrs. Jesse Hamer, National Historian, Woman's Auxiliary, are getting ready for their trip to Chicago for the Conference of State Presidents and State President Elects.

WOMAN'S AUXILIARY TO AMA
10th Annual Conference

The Tenth annual Conference of State Presidents, State-Presidents-Elect and National Committee Chairmen was held on November 18, 19 and 20 at the LaSalle Hotel in Chicago with representatives from 47 states present. The Arizona Auxiliary was represented by Mrs. George Enfield, State President, Mrs. Jesse Hamer, National Historian and Mrs. Brick Storts, State President-Elect.

Mrs. Leo J. Schaefer, National President, opened the conference with a most cordial and gracious welcome. She urged us to "drop in" her hotel suite for a chat. Mrs. Schaefer introduced as special guests; 6 past national presidents, the president of the Southern Medical Association Auxiliary and the president of her own county auxiliary at Salina, Kansas; when the Conference presiding officer, Mrs. George Turner, President-Elect was presented she said "Welcome—you have done well to come. The letters in the word 'welcome', stretched out — spell more than the word implies —

W—work E—energy L—love C—companionship O—objective M—memory E—energy."

Mrs. Turner explained that the policy of our conference was established from the 9 preceding conferences and was designed to afford the delegates the opportunity for an exchange of ideas and to tell new ideas or approaches. She pointed out that the speakers would bring thought-provoking information on each phase of our Auxiliary program with emphasis always on how to become better health leaders in our own community. Our program is what we study and our public relations put what we learn to work. Program and Public Relations go hand in hand. Know your community. Serve your community and Together We Progress was her theme for this Conference.

When Mrs. Schaefer gave her president's report, she emphasized the necessity for a close relationship among County, State and National Auxiliaries. She expressed a desire to attend or have a representative attend all State Auxiliary meetings in order that the national viewpoint might be brought to the state group and in turn the state viewpoint taken to the National Auxiliary. She explained that she had invited AMA representatives to be present at our conference panels in order that they might act as a liason between the two groups. Her theme for the year is "'Together We Progress."

In order to do this we must grow, so we are urged to increase our membership by ten per cent for the year. Since we are expected to know more about health problems than the average lay person we must first educate ourselves as to our local community health facilities and problems. Then we can serve our community for a progressive program. Mrs. Schaefer thanked each Auxiliary board member and the AMA for splendid advice and cooperation.

Dr. Ernest B. Howard, Assistant Secretary to the AMA, explained VA medical care as it now exists. He pointed out the grave results if this program continues with its present setup. In 1952 VA Medical care was given to 65 per cent of non-service connected patients. The AMA opposes this practice.

Throughout the entire conference, emphasis was placed on the correlation of our Auxiliary program with Public Relations. Panel discussions showed the adaptation of Auxiliary activities to program and public relations. We were reminded that we must give the public an appreciation of the health problems. In order to do this, we must know our community and serve our community. In turn, we must know our Auxiliary program: that — Today's Health is the official magazine put out by the AMA for the lay public; that the Bulletin gives us necessary information about our Auxiliary; that our legislative program keeps us informed, etc.

Because each community has different problems, we must plan our program on the local level. This program is valuable only if it is put into action.

Mr. Thomas Hendricks, Secretary, Council on Medical Service, AMA, gave a most informative talk entitled "You Are a Model Member of Your Medical Auxiliary.' He reminded us that the medical service is the product that we have to sell and that Public Relation is selling that product. A good Public Relations job is dependent on a well informed membership concerning policies of the AMA and its Auxiliary. Only then can these policies be put into use. The aims of the council on Medical Service are (1) More and better friends for Medicine (2) extend the services of medicine (3) render service to a community; making it a better place in which to live. As Auxiliary Members our best contacts are made with lay organizations in our community. If we are active members of such groups, we demonstrate a sincere interest to participate in all community activities. Our Auxiliary programs can be used to achieve good public relations in our community.

In the panel discussion on Public Relations — its relationship to program, the following elements of human behavior when in contact with others were suggested (1) thoughtfulness, (2) courteousness (3) interest (4) willingness to do more than our share (5) information on needs (6) friendly attitude. It was pointed out that we must be alert to the actions and opinions and dissatisfactions of our lay population. We need an informed and friendly public if we are to have good Public Relations. Mr. Leo Brown, Director, Department of Public Relations, AMA, in discussing program and Public Relations suggested that one was the plan—the other a means of carrying it out. Public Relations might be referred to as the **seasoning** in the program — (Spice of Life). It is that added something that makes a program more interesting. We must consider the type of public we are meeting when we think of our public relations. There is a big job to be done in the educating the public concerning medical problems. He asked us to read the pamphlets sent to our husbands by AMA. He said "It's your AMA. Together we can meet the objectives set up by the overall program if we know our AMA."

American Medical Education Foundation Panel — was dived into six parts for discussion and explanation: (1) Why is the AMAF needed? Why do Medical schools need funds? (2) What has the AMA done about the need for funds for medical schools (3) What is the National Fund for Medical Education? (4) What did the Woman's Auxiliary do last year to help AMEF. (5) Fund-raising suggestions for County Auxiliaries (6) AMEF "In Memoriam" cards.

It was stressed that the AMEF demonstrates in a concrete way that our doctors are doing something to fight socialism in the U. S. This fund was set up with the object being to raise funds for medical schools. President Eisenhower has said that the 79 AMA approved medical schools are the keystone to our national health. If they cannot continue with private aid — then Federal help is the only recourse. Our Auxiliary goal for this year is $10,000. If each Auxiliary member will give

fifty cents that goal can be reached. Mr. Hiram Jones, Executive-Secretary AMEF complimented the Auxiliary on the splendid job we have done so far and reminded us that we are a permanent part of this program. Since World War II medical schools have been faced with a shortage of funds. The existing medical schools approved by the AMA number 79. Men and women must be trained here to handle problems facing our country which has the highest health standard in the world. The doctors themselves have proposed that this need for funds be met by the medical profession. Our job is to educate our members and our husbands to such a need and to raise funds for the AMEF. The contributors have grown from 7,300 in 1952 to 16,800 so far this year. Upon the success of this program depends largely the future success and freedom of medical education in this country.

Legislation Panel was led by the National Chairman who reminded us that we must continue our vigilance against Socialized Medicine and said "Each doctor's wife is an ambassador for her husband and his profession."

It was further pointed out that we must be well informed in order to bring about a good feeling with the public toward our doctors. Mr. C. Joseph Stetler, the AMA expert on national emergency medical service stated that the problems of legislation are not lessened by the change of administration. He listed the following important issues being considered at present:

(1) Bricker Amendment
(2) VA Services for non-service connected
(3) Universal Military Training
(4) Extension of social security for self employment
(5) Federal Aid to private health plans — (as polio, heart —)
(6) Tax deferment for private health insurance
(7) Free hospitalization for those on old-age pension
(8) Federal Aid to Medical education
(9) Permanent total health disability
(10) Health benefits for dependents of service personel.

Mr. Stetler explained that the AMA does not initiate or draft legislation but does act on that already drafted after a careful analyzation by the AMA Board. He pointed out that the Auxiliary Members are the best source of lobbying for AMA legislation.

Civil Defense: The Chairman of this panel emphasized the danger of mass panic in case of attack. She said that we must convince Russia that we are ready to organize in case the bombs come. In this way we can become a mighty force for peace.

Mr. Stetler again spoke for the AMA and CD. He said that the Auxiliary's role in Civil Defense is one of the toughest because of the apathy among the doctors. We must awaken the doctor to his CD responsibility. He must know his local CD plan and what he is expected to do. All states but one have CD committees. Not all are functioning. We can also assist in training personnel to help in first aid. We must talk up CD, not as a job but as a necessary part of our living.

Nurse Recruitment: Suggestions for the recruitment of nurses necessarily depends upon the community and its needs. Although it is a community problem, we as an auxiliary can spearhead the demand and act as the liason between the medical and nursing group. When possible it is well to work closely with a representative of a nursing school. Films, teas, loans, hospital tours, and future nurses' clubs were discussed as ways of creating interest among the high school students. We can do much toward cementing the friendship between the nursing profession and the medical profession. **Together We Progress.**

Mental Health Panel

Each state president was invited to participate on a panel and Mrs. Enfield was asked to give a 3-minute talk on State Mental Health institutions in Arizona. Mrs. Ross P. Daniel, Chairman of Mental Health and Moderator of this panel pointed out that mental health marked a new road for the Auxiliary; that we must proceed slowly and observe the signs such as caution, steep hill and rough road ahead. Although this is the country's number one health problem, with around 9 million people afflicted in the U. S. or one in twenty now living, the American people shun the problem and very little money is allocated for the needs of mental health. Mental scars do not not show. We must educate ourselves toward this need. Child guidance, clinics offer the best preventive measure. Dr. Richard J. Plunkett, secretary of the AMA Committee on Mental Health, said that much can be done in the school

room. The educational and emotional role must be tied together. Teachers will do something either positive or negative. We can help direct this in a positive way. Plans are being tried and the Mental Health Committee of the AMA hopes to be able soon to recommend one plan for the Auxiliary to take to the PTA.

Mr. Enlow, Assistant Director of the Circulating Department of Today's Health, explained that the AMA does not have enough money to support the sales promotion of this magazine on the newsstand: thus the real job of selling must be done by each Auxiliary member. He suggested that P. R. can mean personal responsibility and that "Today's Health" is a valuable tool to use in strengthening the bond between the Doctor and the community. We need not be apologetic about the magazine as it recently won two awards in the fourth annual magazine show of the American Institute of Graphic Arts in New York. Ninety-two layouts were selected for awards and exhibition from some two thousand entries.

The Rural Health Panel was moderated by Mrs. Neil Woodward, Chairman of the Public Relations Committee for the Auxiliary. The participants discussed the following topics: (1) Meeting the needs for more country doctors (2) Assisting allied and lay groups in health education programs (3) Surveying existing health services available (4) Health Days Mr. Aubrey Gates, Field Director, Council of Rural Health, AMA, was the expert present. He pointed out that because the farm group had stood with the medical profession on the subject of socialism, they deserved any help and consideration possible from the doctors. The farmer must be educated to the need and usefulness of a health program if it is to be carried out. (Chest X-Rays - milk pasteurization). Each program must be based on the community needs. "Man's judgment is no better than his information." The Rural Health Conferences offer a splendid means of explaining to the farm groups the doctor's situation.

Organization Panel

During the discussion of this subject it was stressed that the unification of purpose makes organizing important with the individual as the basis of organization. We need all doctors' wives as auxiliary members if we reach the goal set by the national auxiliary organization chairman. It is three-fold.

(1) To strengthen the existing auxiliary
(2) To enlist members-at-large
(3) To make every eligible doctor's wife a member

The key to an active auxiliary is to get the individual member to find her field and to identify herself in auxiliary work. People join a group if they like what, how and when we do things.

A short history of the American Medical Association was given by the President of the New Jersey Auxiliary. She pointed out that the AMA, founded in 1847 in Philadelphia, is the largest medical organization in the world. It is a non-profit group dedicated to the protection of the public's health. The AMA is the voice of medicine and our nation is one of the healthiest in the world.

Mrs. C. Alex McBurney, President of the Missouri Auxiliary, spoke briefly on the World Medical Association. She stated that 43 countries belong to it with one representative from each country having a vote on policies. The AMA represents our country.

Reports were given by the following National Chairmen: Finances; Historian; Publications; Revisions; Reference; Recommendations.

A summary by the Conference Presiding Officer, Mrs. George Turner, will appear in the December issue of the Bulletin.

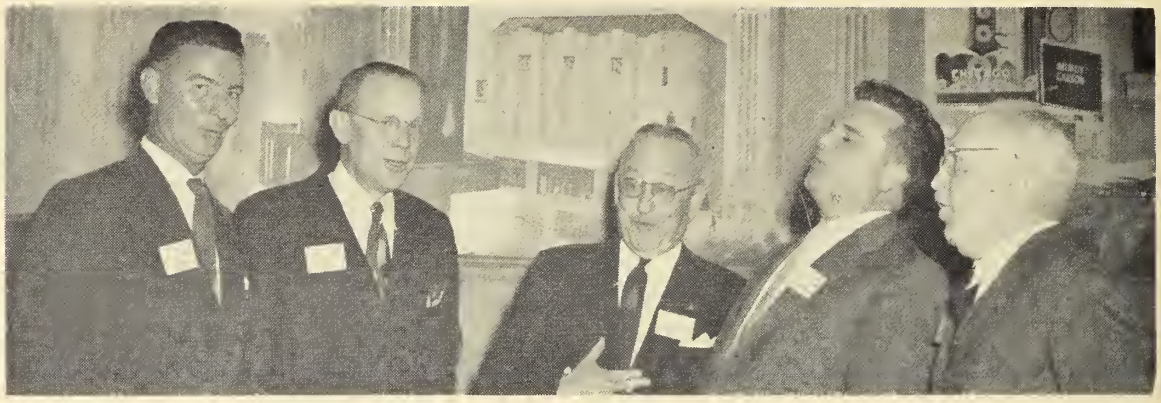
On the last day of the Conference, we were taken on a tour and entertained at lunch at the AMA headquarters. Several movies were viewed which dealt with health education and nurse recruitment. Dr. George F. Lull, Secretary and General Manager, AMA welcomed us to our Association. He urged us to take a message home to our doctors which would impress upon them the important and extensive services being carried on by their organization; the AMA with its 120,000 paying members, doing a nine-million dollar business annually.

Gladys Storts
Pres.-Elect, Tucson, Ariz.

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LEFT TO RIGHT: THE FOSTER'S – V. O. Foster, Tenn.; R. Lee Foster, M.D., Phoenix; L. Fernald Foster, M.D., Mich.; John C. Foster, South Dakota; and Thomas A. Foster, M.D., Maine. The Foster's were attending the meeting of the Editors and Business Managers of the State Medical Journals in Chicago, Illinois.

Los Angeles Radiological Society

The Sixth Annual Mid-Winter Radiological Conference, sponsored by the Los Angeles Radiological Society, will be held at the Ambassador Hotel, Los Angeles, California, on Saturday and Sunday, February 20 and 21, 1954.

Hotel reservations should be made as soon as possible through the Convention Manager, Ambassador Hotel, Los Angeles.

The out-of-state speakers will be Dr. Eugene P. Pendergrass, Philadelphia; Dr. U. V. Portmann, Tucson, Arizona; Dr. Marcy L. Sussman, Phoenix, Arizona; and Dr. F. E. Templeton, Seattle, Washington.

Conference reservations may be made through Dr. Harold P. Tompkins, 658 S. Westlake Ave., Los Angeles 57, Calif. For further information write to Dr. Thompkins.

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Journal of ARIZONA MEDICAL ASSOCIATION

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TABLE OF CONTENTS

OFFICERS

ARIZONA MEDICAL DIRECTORY 6A
WOMAN'S AUXILIARY DIRECTORY 6A

ORIGINAL ARTICLES

SOME STUDIES ON GAS DISTENTION OF THE SMALL INTESTINE 39
Ross Golden, M.D., New York, New York
CLINICAL EXPERIENCE WITH ARTIFICIAL KIDNEY AND RELATED PROCEDURES 44
Peter F. Salisbury, M.D., Ph.D., Los Angeles, California
CANCER OF THE OVARY 48
U. V. Portmann, M.D., Tucson, Arizona
DEMEROL(R) AS AN ANTI-SCORPION THERAPEUTIC AGENT 51
Herbert L. Stahnke, Ph.D., Tempe, Arizona

MEDICAL PROBLEMS

PHOENIX CLINICAL CLUB 52
Louis B. Baldwin, M.D., Phoenix, Arizona

PRESIDENT'S PAGE

SCIENTIFIC PROGRAM COMMITTEE 66
Edward M. Hayden, M.D., President, Arizona Medical Association, Inc.

EDITORIAL

THE PHYSICIAN AND HIS INVESTMENTS 67
LETTER TO THE EDITOR 68
Samuel Wick, M.D., Phoenix, Arizona

TOPICS OF CURRENT MEDICAL INTEREST

RX., DX., AND DRS. 70
Guillermo Osler, M.D.
TEST YOUR MEDICAL KNOWLEDGE 72
(Answers on Page 74)
MEETING NOTICES 68
(American College of Chest Physicians — Diseases of the Chest — Postgraduate Course Diseases of the Chest — American Goiter Association)
BOOK REVIEW 73
Disability Evaluation
PAN-PACIFIC SURGICAL ASSOCIATION — SIXTH CONGRESS 73
PLAQUE PRESENTED TO THE ARIZONA MEDICINE JOURNAL 75
ARIZONA PHARMACEUTICAL PAGE 76
PEDIATRIC CLINICS OF NORTH AMERICA 80
V.A. TO ASK FINANCIAL INFORMATION IN NON-SERVICE CONNECTED CASES 80
MEDICAL LITERATURE NEEDED 80
HOW DO YOU PRACTICE MEDICINE? 81

INTERESTING TOPICS

PROBLEMS OF CANCER OF THE STOMACH 78
W. W. Watkins, M.D., Phoenix, Arizona
PEPTIC ULCER 78

WOMAN'S AUXILIARY

TODAY'S HEALTH 79
Mrs. James C. Soderstrom, Whipple, Arizona

DIRECTORY

LABORATORIES 21A
SANATORIUM DIRECTORY 22A
DRUGGISTS DIRECTORY 25A
PHYSICIANS DIRECTORY 27A

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SOME STUDIES ON GAS DISTENTION OF THE SMALL INTESTINE*

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UNDER average normal conditions very little if any gas can be seen in the small intestine of adults on radiographs of the abdomen. This is presumably because swallowed air escaping from the stomach into the duodenum is efficiently absorbed before it progresses very far. In occasional instances, gas shadows can be seen beyond the duodenojejunal junction but the lumen thus outlined is the same width as that shown by barium in the normal intestine. Such gas shadows seem to be of no clinical significance.

Gas distention of the small intestine is, on the contrary, of great clinical importance. By gas distention is meant either (1) the presence of gas in several or many loops with no or very little increase in the width of the lumen over the average, or (2) widening of the gas-containing loop or loops definitely beyond the limits of normal, whether only one loop or several are involved.

The purpose of this paper is to present some examples of abnormal gas distention of the small intestine associated with either functional disorders or organic disease and to offer physiologic explanations for some of them.

NORMAL PHYSIOLOGY

Intestinal movements are commonly regarded as of two types: (1) the peristaltic or propulsive movements, and (2) the myogenic movements. In both, the longitudinal as well as the circular muscle coats play a part. The propulsive movements involving coordinated contraction and relaxation of the muscle are completely disorganized by cocainization of the wall and are believed to be controlled by reflexes coordinated through the intramural nervous system. The myogenic movements continue unchanged after the intramural nerves are paralyzed and presumably are not controlled by them.

The small intestine is supplied by both divisions of the autonomic nervous system.

The PARASYMPATHETIC fibers arise from the right vagus nerve, pass through the celiac ganglion without synapsing, and accompany the mesenteric blood vessels to the intestine. In the intestinal wall the parasympathetic fibers synapse with nerve cells in both Auerbach's (myenteric) plexus, and in Meisner's (submucosal) plexus. The postganglionic fibers then continue to the end organs, either muscle or gland cells.

The SYMPATHETIC supply is derived from the splanchnics and makes a synapse in the celiac ganglion. The postganglionic fibers of the sympathetic pass with the mesenteric vessels to the intestine and are distributed throughout the wall to the end organs.

In the mesentery, therefore, are preganglionic parasympathetic and postganglionic sympathetic fibers.

The intramural nervous system is composed of both the myenteric and the submucosal plexuses which are elaborate networks of postganglionic sympathetic fibers, and pre- and postganglionic fibers and ganglion cells of the parasympathetic system.

Nerve degeneration experiments have given

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evidence that the intramural nervous system also contains fibers not of either sympathetic or parasympathetic origin. They appear to connect one short segment of intestine with another and presumably are the nerves through which the contraction and relaxation phases of the peristaltic movement are coordinated.

THE CHEMICAL MEDIATOR THEORY OF NERVE ACTION

This theory explains the mechanism of the effect of nerve stimulation on an effector cells as the result of a chemical substance produced at the nerve ending, rather than as the result of the nerve current itself. Loewi (1921) and Dale (1929) presented evidence that the stimulation of the parasympathetic fibers produced acetylcholine at the nerve endings. Cannon (1933) and others found that sympathetic stimulation produced a substance now called "adrenin" which is indistinguishable from the effects of epinephrine. It has been shown that the injection of acetylcholine or one of its derivatives into an animal produces the same effects as parasympathetic stimulation; these substances are called parasympathomimetic drugs. Acetylcholine is destroyed by a specific enzyme "acetylcholine esterase", which works very rapidly. This enzyme is inhibited or destroyed by certain substances, including prostigmine. The result of this inhibition of acetylcholine esterase is to intensify and prolong the effect of the actetylcholine which may be present, thus simulating the effect of parasympathetic stimulation or of the injection of acetylcholine. Obviously the "parasympathomimetic" effect of prostigmine could not be manifested unless acetylcholine were present. Acetylcholine is produced by an enzyme called choline acetylase in the presence of adenosine-triphosphate, thiamine, potassium ions (Nachmansohn and Machado), pantothenic acid (Jaques) and probably other substances. Nachmansohn and co-workers (1946) have shown that acetylcholine plays an important part in the transmission of nerve impulses along the axone and across the synapse as well as at the endplate. The acetylcholine produced as the impulse passes must be destroyed very rapidly by acetylcholine esterase to restore the irritability of the nerve, otherwise the refractory stage is prolonged. Therefore failure to produce this substance, excessive destruction of it, or failure to destroy it at the right instant, would interfere with the normal transmission of nerve impulses at various levels.

Stimulation of the parasympathetic nerves or the injection of acetylcholine or one of its derivatives increases the movement and the tonus of the small intestine. On the other hand stimulation of the sympathetic nerves or the injection of epinephrine, a sympathomimetic drug, inhibits the movements of the intestine and reduces tonus. The mechanism of this action of epinephrine is apparently not completely understood, but there is some evidence that it destroys or prevents the effect of acetylcholine, analogous to the effect of acetylcholine esterase. In fact, it has been shown that the continuous injection of epinephrine in dogs for 15 days produced a fatal gastrointestinal "inhibition" (Dragstedt 1934).

Not only the motor function but other functions of the intestine are under the influence of the nervous system, e.g. absorption and excretion through the intestinal wall.

GAS DISTENTION OF THE SMALL INTESTINE

The detection of gas distention of the intestine is dependent upon correct use of x-ray methods of examination. A film of the abdomen in the supine position usually suffices to show the presence of abnormal amounts of gas. To detect fluid levels in the distended loops, however, films made with horizontal rays are necessary, either with the patient erect or lying on either side.

Having shown gas distention of the intestine, the problem facing the radiologist is, if possible, to find an explanation for it.

Gas distention of the small intestine may be the result (1) of purely reflex causes arising either within the abdomen or outside it, (2) of disorders of neuromuscular physiology within the wall of the intestine, and (3) of organic disease of the intestine or mesentery.

GAS DISTENTION FROM REFLEX CAUSES

ILEUS may be defined as a dilatation of the small intestine, or a portion of it, associated with an accumulation of gas and fluid apparently resulting from excessive secretion and a failure of absorption, and with other disturbances in physiology. It is a "vicious circle" in that the greater the distention, the greater the disturbance in physiology and, therefore, more distention.

PARALYTIC ILEUS, as the term is ordinarily

used, is caused by some influence arising outside the intestine itself, which interferes with its ability to contract, to absorb gas etc. and thus starts the vicious circle of distention.

General peritonitis usually causes paralytic ileus. Considerable evidence has been presented that the distention caused by peritoneal inflammation is produced by excessive activity of the sympathetic system. Arai (1922) found that experimental peritonitis in cats produced a slowing of the gastric and intestinal movements. However, if the sympathetic fibers to the intestine had been previously cut no slowing occurred. Also if a parasympathomimetic drug (Choline) were injected in cats with intact nerve fibers, no slowing of the intestine occurred. Arai concluded that the effect of peritonitis on the intestine is the result of overstimulation of the sympathetics.

Di-isopropylfluorophosphate makes an irreversible combination with acetylcholine esterase, preventing the destruction of acetylcholine. Modell, Krop, Hitchcock and Riker (1946) found that the strong parasympathomimetic effect of this drug was prevented temporarily by epinephrine as well as by atropine. This, and other evidence, suggests that the inhibiting effect of epinephrine, and also of sympathetic stimulation, is produced by blocking the action of acetylcholine. Presumably the parasympathomimetic drug in Arai's experiments was sufficient to overcome the acetylcholine-blocking effect of the adrenin produced by the overstimulated sympathetic.

Banthine is a relatively new antiparasympathetic drug which produces (Longino and co-workers, 1950) an atropine-like postsynaptic block. It has been used to inhibit the secretion of acid in the stomach of patients with peptic ulcer. It also produces marked slowing of the transit time of the small intestine (Golden, 1950) and has been used at the Presbyterian Hospital (Lepore, Golden & Flood, 1951) in certain cases in which parasympathetic hyperactivity was present.

In two patients with ulcerative colitis, banthine caused gas distention of the small intestine. On patient discovered that he could control his abdominal distention by reducing the dose of banthine. It has long been known that rectal stimulation or irritation produces sympathetic effects. Ulcerative colitis involving the rectum provides a mechanism for sympathetic stimulation. A hypothetical explanation for this distention with banthine would be the superimposition of sympathetic overactivity upon a parasympathetic block.

Gas distention of the intestine may appear in association with pneumonia and with lumbar myositis. In a healthy 18 year old boy extreme distention of the intestine and of the urinary bladder developed during an attack of very severe back pain, shown later to be the result of herniation of an intervertebral disc. This distention disappeared when the severe pain was relieved and recurred when he had a second attack of back pain. Both the distention of the bladder and of the intestine can be explained as the result of overactivity of the sympathetic.

GAS DISTENTION FROM DISORDER OF NEUROMUSCULAR PHYSIOLOGY

Hypoproteinemia.

For many years gas distention of the small intestine has been observed with hypoproteinemia, especially when large amounts of intravenous salt solution were given. This has occurred during the treatment of burns, following operations on the gastrointestinal tract, and as a complication of the treatment of mechanical ileus by deflation with the Miller-Abbott tube. After deflation is apparently complete, redistention along the Miller-Abbott tube may occur. According to the literature, edema begins to develop when the blood protein descends to 5.5 plus-minus 0.2 per cent. This distention is to be regarded as a mild paralytic ileus presumably the effect of edema of the wall of the intestine. The intestine does not respond to prostigmine which suggests a lack of acetylcholine in the intestinal wall.

Hypopotassemia.

Gas distention also occurs in some patients with a normal serum protein who have a low blood potassium. Moore (1949), and Randall and co-workers (1949) pointed out the association of intestinal distention with low blood potassium following surgical operations and in the presence of normal blood protein. These and other writers have shown that a loss of potassium occurs after operation which cannot be prevented during the first two postoperative days. Unless replacement of the K-ion is effected, the loss continues and symptoms develop in 4 to 9 days. These symptoms are drowsiness, languor, oliguria, edema and mild intestinal distention. Prostigmine has no effect on the distention, sug-

gesting a deficiency of acetylcholine in the wall of the intestine. The symptoms begin when the serum potassium descends to 3.5 meq/L (Normal 4 to 5 meq/L or 16 to 20 mgm/100 cc.) and become severe at 2.6 meq/L or less. The symptoms are quickly relieved by the administration of potassium and can be prevented if KCl is included in the intravenous infusions. The lack of acetylcholine can be reasonably attributed in part at least to the insufficiency of K-ions, which are necessary for its synthesis by choline acetylase.

Other Possible Causes of Insufficient Parasympathetic Effect

Occasionally gas distention is seen with both blood protein and potassium at normal levels. A 75 year old woman had a radical operation for carcinoma of the breast. Convalescence was normal until the 8th postoperative day, when gas distention of the intestine appeared. The blood protein and potassium were normal. Prostigmine produced no response in the intestine. After several days urecholine, an acetylcholine derivative, was administered parenterally and the distention promptly began to diminish and disappeared after 24 hours. The sequence of events suggests that for some unexplained reason production of acetylcholine was insufficient and after replacement by urecholine, the normal production of acetylcholine was restored. It seemed as if some sort of vicious circle had been interrupted.

Nothing was noted which would indicate what substance or substances necessary for the production of acetylcholine were lacking. It is known that adenosine triphosphate, a thiamine compound, the correct concentration of potassium ions and the enzyme choline acetylase are necessary for the production of acetylcholine. Jaques (1951) presented evidence that a diet deficient in pantothenic acid caused atony and distention of the gastrointestinal tract in rats and that the administration of pantothenic acid in 16 cases of paralytic ileus was followed by striking improvement. Nothing was said about the blood protein and potassium in Jaques' cases but the prompt clinical improvement suggests that neuromuscular physiology in the intestinal wall was improved after giving pantothenic acid, probably by increased production of acetylcholine.

It is quite possible that other substances as yet unidentified are necessary for the synthesis of acetylcholine and may be lacking under certain conditions.

MECHANICAL ILEUS results from a mechanical interference with the transmission of intestinal contents. In many cases the obstruction was in existence for months or years and apparently the intestine was able to compensate for it. Then for some reason the compensation is broken, the intestine dilates and the vicious circle of ileus is established. For example, an annular carcinoma of the ileum suddenly produced an acute mechanical ileus in a 75-year old man who had been symptom free up to the onset of acute abdominal pain. After deflation with the Miller-Abbott tube, the lumen through the carcinoma was shown by barium studies to be not more than 3 mm. wide. At operation, extensive metastases were found in the liver, indicating that the carcinoma had been in existense for months or longer without causing symptoms, until the acute ileus developed suddenly. Adhesions may act in a similar way. Deflation of the intestine with the Miller-Abbott tube in ileus with peritoneal adhesions in some cases is followed by restoration of normal compensation without surgical release of the offending adhesion. It appears, therefore, that even in mechanical ileus there is a functional element.

GAS DISTENTION WITH ORGANIC DISEASE OF THE INTESTINE

Amyloidosis

Amyloidosis of the intestine may cause gas distention sufficient to simulate ileus (Randall, 1933). In a similar case sent to me by Dr. Powers of Palo Alto, California, histologic studies showed that the amyloid had been deposited in the myenteric ganglia, many of which had been destroyed (Golden, 1945, p.214). In a recent case at the Presbyterian Hospital gas distention of the small intestine over a period of several weeks with extremely slow passage of barium was due to amyloidosis. The blood protein and potassium were normal. The intestine did not respond to prostigmine, which suggested that insufficient acetylcholine was present. Then urecholine, a derivative of acetylcholine which has a marked stimulating effect on the intestine, was injected parenterally without noticeable effect on the small intestine. These facts suggested that for some reason the wall of the intestine was incapable of responding to acetylcholine and the possibility of amyloidosis was suggested.

Scleroderma

When the digestive tract is involved by scleroderma, the esophagus is the most frequent location. Hale and Schatzki reported dilatation of the small intestine in four cases. In one of them, prostigmine and in another mecholyl (a derivative of acetylcholine) produced no effect. One patient developed the signs of mechanical ileus and at operation irregular dilatation of the upper loops of jejunum was found. In both amyloidosis and scleroderma the intestinal wall becomes incapable of responding to a parasympathomimetic drug.

Sprue

In its advanced stages, the small intestine of victims of sprue shows evidence of submucosal edema, and of atrophy of the mucosa and of the tunica muscularis, (Golden, 1945, p. 91). This in some cases is associated with inability to absorb gas as well as other substances (Golden, 1945, p. 99). Kantor (1939) reported instances when the gas was sufficient in quantity to suggest ileus.

DISEASE OF THE MESENTERY

Extreme dilatation and very slow movement of barium were found in the ileum of a 35 year old man. At operation extensive infiltration of the ileal mesentery by carcinoma metastases from a linitis plastica carcinoma of the stomach was found. The wall of the intestine was thickened and edematous but was not involved by the carcinoma. Re-examination six months after operation showed the lumen of the ileum to be normal in caliber. The patient died about sixteen months after the operation.

A hypothetical explanation of the dilatation of this intestine can be offered based upon Cannon's law of denervation, which is stated as follows: "When in a functional chain of neurones one of the elements is severed, the ensuing total or partial denervation of some of the subsequent elements in the chain causes a supersensitivity of all the distal elements, including those not denervated, and effectors if present, to the excitatory or inhibitory action of chemical agents and nerve impulses; the supersensitivity is greater for the links which immediately follow the cut neurones and decreases progressively for the more distal elements" (Cannon and Rosenblueth, 1949, p. 186). Assuming that the extensive infiltration of the mesentery by carcinoma could interrupt some of the neurones, partial denervation could be produced. The mesentery contains preganglionic parasympathetic fibers and postganglionic sympathetic fibers. Therefore the sensitivity would be greater for the sympathetic chemical mediator which would result in dilatation of the intestine. Furthermore it has been shown in experimental animals that the hypersensitivity to epinephrine produced by denervation diminishes with the passage of time which would explain the return of the intestine to normal caliber six months after the operation.

Disease of the mesentery may also cause a localized dilatation of the intestine. In one instance it was due to a lymphangioma of the mesentery (Golden, 1945, p. 121), and in another to localized lymphadenitis and fibrosis of the mesentery in a case of regional enteritis (ibid, p. 141).

DISCUSSION

Gas distention of the small intestine may occur in many different conditions. In some cases the reason for it may be easily found, if the basic physiology, particularly the neurophysiology of the intestine is borne in mind. The part played by acetylcholine, the factors concerned in its synthesis in the wall of the intestine, the antagonists of acetylcholine, the possibility of inhibition of the parasympathetic control by excessive sympathetic influence, — all of them are important concepts in the study of these cases.

Parasympathomimetic drugs are useful in the clinical investigation of selected cases. If a choline esterase inhibitor, such as prostigmine, fails to produce an effect on the intestine, a deficiency of acetylcholine may be hypothecated. If an acetylcholine derivative, such as urecholine or mecholyl, stimulates the intestine and reduces the dilatation, the above-mentioned hypothesis seems to be confirmed. On the contrary, if urecholine fails to produce an effect, the wall of the intestine is presumably unable to respond to the parasympathetic mediator substance, acetylcholine, which suggests organic disease of the wall. However, in some cases a reasonable explanation for gas distention cannot be found in the light of present knowledge.

The normal wall of the intestine is thin. When two gas-distended loops lie in contact, the space between the air columns should be 1-2 mm wide, which represents the width of the adjacent walls

of both. If this is 3-5 mm. in width, the wall is presumably widened by (1) edema, (2) disease of the wall such as amyloidosis, carcinomatosis of the peritoneum, tuberculous peritonitis, etc. Edema of the intestine is largely submucosal. It causes widening of the submucosa which extends into the mucosal folds. In the shadow of the gas-distended jejunum, these folds produce, in the absence of edema, sharply defined cross striations usually about 1 mm. in width. In the presence of submucosal edema, these cross striations become widened to 2-4 mm., and some become ill-defined. Ascites may separate two adjacent gas-distended loops.

SUMMARY

(1) Certain facts concerning the basic psysiology of the small intestine are necessary to attempt to understand the significance of gas distention. Neuromuscular physiology, the chemical mediator theory of nerve action, and balance between the parasympathetic and the sympathetic divisions of the autonomic nervous system are of particular importance.

(2) Gas distention may result from purely neurogenic causes, from disorders of neuromuscular physiology within the wall produced by deficiency of one or more of the factors necessary for the production of acetylcholine, and from organic disease of the wall of the intestine or mesentery.

(3) Acetylcholine derivatives, such as urecholine and mecholyl, and acetylcholine esterase inhibitors such as prostigmine are useful in the physiologic study of selected cases.

REFERENCES

1. Arai, K. Experimentelle untersuchung uber die Magen-Dannbewegungen bie akuter Peritonitis, Arch. f. Exp. Path. u. Pharmacol., 1922, 94, 149-189.
2. Bullock, T. H., Nachmansohn, D., and Rothenberg, M. A. Effects of inhibitors of choline esterase on the nerve action potential. Jour. Neurophysiol., 1946, 9, 9-22.
3. Cannon, W. B. Chemical mediators of autonomic nerve impulses. Science, 1933, 78, 38-48.
4. Cannon, W. B., and Rosenblueth, A. The supersensitivity of denervated structures. The Macmillan Co., New York, 1949.
5. Dale, H. H. Natural chemical stimulators. Edinburgh Med. Jour., 1938, 45, 461-480.
6. Dragstedt, L. R. Quoted by Sollman, p. 363. (Sollman, T. A manual of pharmacology, 6th ed., Philadelphia, W. B. Saunders Co., 1948.)
7. Golden, Ross. Radiologic Examination of the Small Intestine. J. B. Lippincott Co., Philadelphia, 1945.
8. Golden, Ross. Some clinical problems in small intestinal physiology (Mackenzie Davidson Memorial Lecture). Brit. Jour. of Radiol. 23, No. 271 (July) 1950.
9. Hale, C. H., and Schatzki, R. Roentgenological appearance of Gastro-intestinal tract in scleroderma. Am. J. Roentgenol., 51: 407 (April) 1944.
10. Jaques, J. E. Pantothenic acid in paralytic ileus. Lancet., 2, 861, 1951.
11. Kantor, J. L. The Roentgen diagnosis of idiopathic steatorrhea and allied conditions. Am. J. Roentgenol., 41:758, 1939.
12. Lepore, M. J., Golden, Ross, and Flood, C. A. Oral Banthine, an effective depressor of gastrointestinal motility. Gastroenterology, 17, No. 4 (April) 1951.
13. Loewi, O. Ueber humorale Uebertragbarkeit der Herznervenwirkung, I. Pfluger's Arch., 1921, 189, 239-242.
14. Longino, F. H., Grimson, K. S., Chittum, J. R. and Metcalf, B. H. An orally effective quaternary amine, banthine, capable of reducing gastric motility and secretions. Gastroenterology, 1950, 14, 301-313.
15. Modell, W., Krop, S., Hitchcock, P., and Riker, W. F. General systemic actions of di-isopropyl fluorophosphate (DFP) in cats. Jour. Pharm. and Exp. Ther., 1946, 87:400.
16. Moore, F. D. Adaptation of supportive treatment to needs of the surgical patient. J.A.M.A., 1949, 141, 646-653.
17. Nachmansohn, D., and Machado, A. L. The formation of acetylcholine. A new enzyme: "Choline Acetylase." J. Neurophysiol., 1943, 6, 397-404.
18. Randall, O. S.: Multiple myeloma complicated by intestinal obstruction due to amyloid infiltration of the small intestine. Am. J. Cancer, 19:838, 1933.
19. Randall, H. T., Habif, D. V., Lockwood, J. S., and Werner, S. C. Potassium deficiency in surgical patients. Surgery, 1949, 26, 341-363.

CLINICAL EXPERIENCE WITH THE ARTIFICIAL KIDNEY AND RELATED PROCEDURES

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DURING the past ten years a number of procedures have been developed which have one characteristic in common: They remove large volumes of blood from a patient; this blood is modified outside the patients' body and is then returned. Several of these procedures have now been used in over one thousand instances and it is the general opinion among those who are well acquainted with these methods that blood dialysis ("the artificial kidney") and certain other related methods have a useful and well defined place in the medical armamentarium, and that these procedures have outgrown their infancy and should not now be regarded as experimental treatments. This paper aims to describe some of the clinical experience with dialysis and similar methods and to outline the indications and contraindications for their use.

When the natural homeostatic mechanisms have become inadequate in a patient it may be desirable by way of treatment to accomplish one or several of the following purposes: to add to or to remove from the body substances which may be deficient or which may be present in excess. Such substances could be easily diffusible, small molecules (electrolytes, glucose, water, the unknown toxins which cause certain symptoms of uremia), they may be the size of

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protein molecules or bound to protein molecules, or they may even be cellular constituents of the blood or bound to blood cells. Accordingly, when it is necessary to remove blood cells such as in fetal erythroblastosis, the patients' blood can be taken off in toto and may be replaced with normal bank blood. Such a procedure is called *replacement transfusion.* In certain instances the blood of a sick patient is passed through the body of a healthy donor, so that the patients' blood and that of the donor are completely admixed; this procedure is called *cross transfusion* and presupposes that the intact organs of the donor can furnish deficient materials to the patient and dispose of accumulated waste products with impunity. In certain conditions in which the existence of toxic proteins may be a factor in the causation of disease it may be desirable to modify the blood in such a way that the patients' own blood cells are returned to him while the blood plasma is removed intermittently or continuously. This procedure is called *plasma replacement* or *plasmapheresis.* Finally, it is often beneficial to return the patients' plasma proteins and blood cells, while removing or adding small, diffusible molecules. This can be accomplished by the various methods of blood *dialysis,* which have been called *"the artificial kidney"* when a dialyzing solution is used to modify the patients' blood and *"artificial placenta"* when whole blood is used in place of the dialyzing solution, as has been done in some instances ("placenta" not because it imitates or replaces this organ, but because it is like a placenta in structure: blood — membrane — blood). Only those procedures which have become well established in American medical practice and are therefore not considered experimental will be mentioned here, although it should be pointed out that some of the other treatments have also had extensive clinical application here and abroad.

Of the above methods the *artificial kidney* has had the widest use and the most extensive bibliography. This procedure uses commercially available cellophane membrane to "wash" the blood. The sieve-like pores in a cellophane membrane readily permit the passage of molecules or ions up to a weight of 4000. Larger particles, cells, bacteria and viruses do not pass through the membrane. This membrane comes in the form of sheets or tubes; it can be used as a series of sheets which are held in place by plastic or rubber pads, or as coiled tubing which is wound on horizontal or vertical drums which may or may not rotate. The clinical response to dialysis is influenced by the kind of cellophane, the method of its mounting and the nature of the dialyzing solution. This fact is not often realized and may account for some of the clinical disparities.

During an actual dialysis the patient is heparinized. Blood is removed from an artery or vein at a rate of about 200 cc. per minute. The blood is routed through the sterile dialyzer and returned to the patient. This procedure may be continued until the desired result is achieved which will usually be the case after 6-8 hours of dialysis. The dialyzing apparatus should be capable of removing about 80-90% of the identifiable waste material (urea, creatinine) in one passage of blood through the machine; this is accomplished with 40,000 sq. cm. of cellophane tubing in the Kolff-Harvard type of machine and with about 21,000 sq. cm. of cellophane in the Skeggs-Leonards model. Both devices have a "urea clearance" of up to 180 cc. per minute and a "creatinine clearance" of up to 120 cc. Untoward side effects have not been observed from the use of the sheet cellophane dialyzer described by Skeggs and Leonards; but the use of the Kolff-Harvard machine causes elevations of blood pressure in about 25-30% of the patients. It is possible that this complication indicates constriction of the renal arterioles caused by the passage of blood through cellophane tubing; such vasoconstriction may even interfere with the natural repair processes in the kidney and could well be responsible for the fact that many patients exhibit excellent "chemical" results from the dialysis treatment (lowered blood NPN, adjusted electrolyte balance, diminished edema) but do not show a corresponding prolongation of their life span. In the future it may be possible to avoid such constriction of the renal arterioles during dialysis either by using the sheet cellophane dialyzer of Skeggs and Leonards or by using the renal vasodilator hydrazinophthalazine ("Apresoline" (R)). Other serious complications of artificial kidney treatment have not been observed in a significant number of cases, but it is obvious that the method cannot be used in the presence of gross hemorrhage because of the need for heparin. During the course of dialysis the patients do not usually require additional

medication, and there is no discomfort due to the procedure.

The method is very effective in adjusting derangements of the electrolyte levels such as hyperkalemia (excessive potassium), in reversing or mitigating some of the clinical features of uremia – coma, nausea, twitching and the like – in removing diffusible poisons such as barbiturates or bromides, and in treating pulmonary and peripheral edema of varied etiology.

From the clinical point of view it is up to the attending physician to decide whether or not dialysis or some similar method should be used in an individual case. His judgment will be influenced by the availability of the apparatus and experienced operators, the adequacy of the preceding conservative treatment, and the prognosis of the case. It should be emphasized that many patients who a few years ago were considered to be beyond hope can now be reclaimed by careful conservative management. This is especially true for patients with anuria or oliguria, the syndrome which used to be called "lower nephron nephrosis" and which is now known as acute renal failure. There is no hard and fast rule which one should follow in the selection of anuric patients for dialysis treatment. In general, the clinical condition of the patient is the most valid criterion; W. J. Kolff, one of the originators of dialysis, will dialyse an anuric patient "whenever I'm scared not to do so." Increasing mental confusion, coma, increasing left heart failure and pulmonary edema, and hyperkalemia are primary indications for the immediate use of dialysis in the uremic patient, but of course, do not substitute for careful conservative management before and after the dialysis, including the use of potassium-absorbing resins by mouth, the rigid control of water balance, etc.

At the University of Minnesota it was possible to keep an anuric child alive for ninety-one days with the combined use of dialysis and of conservative measures; the child was then permitted to die because the underlying lesion (severe glomerulonephritis) was deemed to be beyond repair. The case illustrates the therapeutic possibilities of dialysis in anuric patients, inasmuch as the longest recorded survival of anuric patients under conservative treatment alone is only about 25 days.

In one of our cases, M. W., a 15 year old boy, became anuric following an episode of massive bilateral hemorrhage from both ureters apparently due to some form of purpura. The anuria continued for six days, the patient became mentally confused and developed severe pulmonary edema in spite of careful management and the avoidance of overhydration. During a dialysis procedure which lasted 8 hours, 2500 cc. liquid was removed from his blood and the blood creatinine lowered from 14 to about 9 mgm%. Following the procedure the patient was mentally clear, pulmonary edema had disappeared, peripheral edema decreased, and the next day he started to diurese. There was an uneventful recovery and the procedure was considered life saving.

The following case illustrates the use of dialysis in a case of uremia due to chronic glomerulonephritis. M. F. a 48 year old married nurse, had been known to suffer from glomerulonephritis of the one kidney which remained after unilateral nephrectomy 30 years ago. She was hospitalized for three months before the dialysis procedure, the reason for hospital care was the fact that she was nauseated to a degree which made it impossible for her to retain even small quantities of liquid or solid food. She received all liquids intravenously or by subcutaneous clysis during a period of three months, was suffering intensely from headaches as well as nausea and maintained a blood creatinine level of about 12 mgm%. The continued hospitalization constituted a severe drain on the family budget.

Following a dialysis procedure her blood creatinine decreased to 5 mgm%, but returned to the earlier high level within the week; however her nausea and headache disappeared immediately after the dialysis and she was able to eat and retain solid as well as liquid nourishment. Ten days after the dialysis she was discharged from the hospital and was able to do her housework at home, where she lived for seven months before she died from a severe intercurrent bilateral pneumonia.

There are now many cases of patients with chronic irreversible uremia who have been made and kept comfortable by dialysis, even though it is not claimed that their life span has been increased by this procedure. The majority of these patients have been treated with the Kolff-Harvard type of dialyzer and one wonders wether or not the use of apresoline with the dialyzer or the use of the Skeggs-Leonards

dialyzer would not have yielded even better clinical results. It is quite possible that the more modern techniques of dialysis will indicate a wider and more varied usefulness of this principle.

Recent experiments have furnished evidence that dialysis is able to remove barbiturates from the blood about twenty times as rapidly as the intact hepatorenal system of a patient. This would seem to make dialysis the treatment of choice in cases of severe barbiturate poisoning. I have no clinical experience with this type of patient, but have recently seen a dog, weighing 33 pounds, which had received 1800 mgm (30 grains) sodium phenobarbital intraperitoneally. This dose corresponds to 200 ½ grain phenobarbital tablets in a 130 pound person. The dog woke up after only 3½ hours of treatment with the artificial kidney, indicating that similar instances of barbiturate poisoning can be treated very effectively in human patients; as has been reported from a group in Washington, D. C.

A few remarks about published statistics may be in order here. When one reads publications which describe a series of patients who have been treated with the artificial kidney one is impressed by the fact that these patients are not expected to live when treated with conservative methods alone and that the patients are suffering from a wide variety of pathological states. Moreover, the dialysis procedure varies with each operator and is not well standardized. Different operators employ differing solutions, differing machines, differing criteria, and differing auxiliary treatment. It is not surprising therefore that the results of the application of the artificial kidney have varied greatly and that in some hands it has yielded gratifying results while the clinical effect in other centers has been almost zero and has tended to discredit the procedure. Many encouraging successes have been reported wherever the artificial kidney procedure has been used in time, and not as a last ditch heroic measure. The procedure has been very welcome in the Army Hospital in Pusan, Korea, at the Peter Bent Brigham Hospital in Boston, at the Cleveland Clinic and the New York Hospital. At the University of Minnesota and at the Southwestern Medical School in Dallas the procedure has been tried but encouraging clinical results have not been observed. It is believed that this discrepancy must be due to variations in the technique used at these centers, because even slight variations may make the difference between success and failure. For instance, when first used in Dallas, dialysis was tried on patients without being first tested on animals. Later studies showed that, as practised in Dallas, dialysis actually shortened the life span of treated uremic dogs. Dialysis was therefore abandoned. It is interesting to note that the method has been recently revived in Dallas, and with more adequate equipment. When one is engaged in the treatment of patients who have been given up by everyone else one cannot expect to be successful every time, but those patients who are salvaged or who are made comfortable for prolonged periods of time make the procedure worthwhile and compensate the operator for the times when the procedure proves to be a heroic but fruitless effort.

Replacement transfusion has been used in several hundred patients who had diseases other than erythroblastosis fetalis. It has the advantage that complex equipment is not necessary and that it can be performed wherever large amounts of blood are available from a blood bank. Blood is removed from the patient's radial artery or from his saphenous vein. Simultaneously with the removal, corresponding amounts of bank blood are injected into a pheripheral vein. The infused blood should be cross matched very accurately, since intravascular hemolysis may aggravate the already precarious condition of the patients. During the procedure the patient should receive about 10 cc. of calcium gluconate intravenously for every four units of blood given. The procedure often causes allergic phenomena such as urticarial wheals, which can be controlled by intravenous antihistaminics. Some patients will require intravenous sedation during this procedure, because they may become frightened by the appearance of hives and itching, by the sight and handling of large amounts of blood, etc.; One should aim to remove a quantity of blood corresponding to about twice the total blood volume of the patient. Replacement transfusion will then dilute the patients' own blood so as to leave only about 15% of the original plasma and red cells in the patients body.

Replacement transfusion is the method of choice when it is necessary to remove non-diffusible substances from the blood stream, such as the toxin produced by Clostridium Welchii, the

complexes of carbon monoxide and hemoglobin, large amounts of free hemoglobin etc. The literature contains reports of about twenty patients who were successfully treated with replacement transfusion for anuria due to clostridium infections. Since one can only remove small amounts of diffusible substances with replacement transfusions the use of this method would seem to be a waste of blood when other effective methods for heroic treatment are available. It must be borne in mind, however, that much is yet unknown about renal physiology, the nature of the toxic substances in renal disease and the efficacy of various therapeutic measures. When no other treatment is available it would seem justifiable to use this method. Some physicians, like Snapper of Chicago, prefer this method in the treatment of anuria to the use of dialysis; it must be noted however that Snapper had experience only with the obsolete models of the artificial kidney.

The following case is of interest because it illustrates the surprising results which one sometimes encounters in this field. G. F., was a 40 year old Baptist minister with six children. During a physical examination 20 years ago he was informed of the presence of albumin in the urine. Whenever he had a physical checkup in the intervening period he was again told of the abnormal urine, but he continued to work and to lead a normal life until 1951 when he developed symptoms of uremia. He became weak and nauseated, suffered from severe headaches, anemia developed and he lost much weight. He was hospitalized for several weeks and had all known treatments, including repeated transfusions of washed red cells. In June 1952 his blood creatinine was 15 mgm%, the creatinine clearance was 5.5% of normal, he exhibited involuntary twitchings and was adviced by several other physicians that he was in the terminal phase of uremia. Although I felt that I probably would not be able to offer any constructive help I consented to treat him because on the flat abdominal x-ray plate his kidneys did not appear very contracted and his blood pressure was only moderately elevated —— 160/110. It is hard to turn down a person who comes to you for help unless all the facts are clearly against the patient; one cannot always predict the outcome in the individual case. On June 4, 1952 9,000 cc. of his blood was withdrawn and 9,800 cc. was administered. Immediately after the replacement transfusion he felt much stronger, the uremic signs and symptoms disappeared and the creatinine clearance rose to about 10% of normal. Four weeks after the procedure he resumed his work as a minister and has since been working steadily and without symptoms on the same protein – poor regime which he had followed for years before. When last seen about two weeks ago he was still asymptomatic and working, although his serum creatinine had risen to 12 mgm% from the 8mgm% immediately after the transfusion. One would find it hard to explain the limited therapeutic success in this case unless one postulates the existence of toxic proteins in this mans' blood, which may have been removed by the replacement transfusion.

In our hands the procedures of dialysis and related measures have yielded favorable results in about half of the cases. We have never regretted their use but, on the contrary, have had occasion to regret their omission in several patients who seemed to respond well to conservative measures but died when diuresis had already set in. I feel confident that these procedures will eventually stand the test of time and will be accepted for what they are – valuable additions to the armamentarium, which enable us to prolong the life and productivity of many otherwise hopelessly ill patients.

CANCER OF THE OVARY

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I WILL discuss cancer of the ovary from the standpoint of a therapeutic radiologist.

In my experience, radium therapy seldom is indicated for the treatment of ovarian cancers, with the possible exception of implanting needles or radon seeds in recurrent nodules which sometimes develop in the abdominal scar following operation, or for extensions or metastases into the vaginal wall.

However, roentgen therapy plays an important role in the treatment of malignant neoplasms

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of the ovary, principally as an adjunct to surgical procedures. Roentgen therapy should be employed under the following conditions (1) if complete removal of all malignant tissues is impossible or found to be improbable; (2) as a pre-operative procedure for certain types of ovarian cancers to reduce the extent of involvement so that in certain selected cases surgical procedures may be performed for palliation; (3) for advanced cancer of the ovary involving the pelvic or abdominal structures extensively. I doubt that pre-operative irradiation will render what was primarily and inoperable condition surgically curable.

The diagnosis of malignant tumors of the ovary is not easy. They develop insidiously, usually in women in the middle age group approaching the menopause. In many instances the first manifestation will be slow, progressive enlargement of the abdomen, often attributed to so-called "middle age spread", or even pregnancy. There may be no obvious tumor mass if the abdominal enlargement is due to ascites. This sign of malignant growth develops so slowly that it may be unrecognized for some time, either by the patient or by the physician. Bimanual pelvic examination should be made under such circumstances; also, peritonescopy is a most valuable diagnostic procedure. Vaginal bleeding does not occur frequently, but may develop if there is extensive, invasive growth. Some malignant tumors of the ovary may be quite limited, but others rapidly invade the adnexa, neighboring viscera and spread by lymphatic channels and blood stream to result in remote metastases. Therefore, not infrequently the signs and symptoms of ovarian cancers will be caused by involvement of one or both ovaries, the uterus, vagina, peritoneum and rectum. In addition to abdominal enlargement, a frequent symptom is pelvic or lumbar pain due to the pressure of a tumor or invasion of pelvic structures. There may be secondary anemia, weakness and weigh loss in advanced cases. The most frequent sites for metastases to appear outside of the abdomen are in the lungs and brain.

About 25% of primary tumors of the ovary are malignant. Carcinomas of several clinical and histologic types are most common; sarcomas being uncommon. The carcinomas may be cystic or solid. The different types and their treatment will be discussed individually. However, in general, it is my opinion that radical surgery is indicated as the primary treatment in most cases. Whenever possible, the primary ovarian tumor, both ovaries and the uterus should be removed. According to my observation, the so-called "all American operation" or "pelvic exenteration" is of doubtful benefit because of the necessarily high mortality and morbidity.

Papillary adenocarcinomas of the cystic type are the most common of the malignant ovarian neoplasms. As in other glandular organs, malignant degeneration may develop in a cyst which primarily may have been benign. These neoplasms sometimes are bilateral, usually grow quite rapidly after breaking through their cyst wall, then invade other pelvic structures and become implanted on the peritoneum and cause ascites.

Tumors of this type are relatively radio-sensitive. Roentgen therapy should be given immediately after the operation, when the cyst wall has been ruptured spontaneously or at operation or if invasion of the surrounding structures is found. The treatment may not cure, but usually delays the formation of ascitic fluid, alleviates distressing symptoms and prolongs economic usefulness and life.

When ascites has already developed from an extensive invasion of the peritoneum, roentgen therapy should be given after paracentesis which is necessary because the fluid will absorb so much of the radiation that otherwise the neoplastic tissues cannot be adequately irradiated. I doubt that under such circumstances surgical procedures will be beneficial so far as the removal of much malignant tissue is concerned.

I have tried intra-abdominal injection of radio-active gold (Au 139), after paracentesis, in some patients with far advanced papillary cystadenocarcinoma of the ovaries with ascites. The only effect observed was possible delay of the formation of ascitic fluid in a few instances, comparable to similar benefit from roentgen therapy. This occurred only in patients when the radio-active material could be diffused homogeneously throughout the peritoneal cavity. When there was loculation, it was impossibly to give adequate and homogeneous irradiation with the isotope. The results were disappointing.

Papillary adencarcinomas of the solid type are extremely malignant and progress rapidly.

The primary tumors vary in size, but most of them, when not checked, will occupy not only the pelvic cavity, but also extend into the abdomen. If these tumors are small, they may be removed surgically, but roentgen therapy should always be given post-operatively because of their high degree of malignancy. They are quite radio-sensitive. Even when recurrences develop subsequent to operation and irradiation, it may be advisable to operate again if there are no remote metastases, to remove as much malignant tissue as possible, and then give more roentgen therapy depending upon the dosage given previously and to the present condition of the tissues irradiated.

Adenocarcinomas of the ovary of the pure solid type are uncommon, but are the most common of the solid variety of ovarian cancers. They may be unilocular or multilocular. Most can be removed completely by surgery, but it is wise to give roentgen therapy post-operatively as a "prophylactic" procedure, because neoplastic cells may have invade neighboring tissues or escaped the most meticulous surgical technique.

Glanulosa cell carcinomas are low-grade, slowly growing neoplasms with variable hormonal influences. Usually the normal menstrual cycle is altered, but otherwise there seems to be no characteristic symptom except pelvic mass. Many of these tumors can be removed surgically, and cured if limited in size. However, if invasion into surrounding tissues is encountered, radical operation is necessary, to be followed by roentgen therapy, though these neoplasms are not particularly radio-sensitive.

Arrhenoblastomas of the ovary are also solid tumors showing active hormonal influences, causing masculinization of varying degree. Frequently atrophy of the uterus occurs. They are relatively rare, often unilateral, rarely metastasizing and are one of the lowest grades so far as mlaignancy is concerned. The treatment is surgical. Post-operative roentgen therapy seldom is beneficial, but it may be worthwhile in exceptional cases when a high degree of malignancy may have been found histologically.

Dysgerminomas also are rare. They are composed of unidifferentiated sexual elements which I have always thought of as similar to seminomas of the testicle. They are similarly radio-sensitive and responsive. They appear in the younger age groups, usually between twenty and thirty. They also affect endocrine balance, therefore, it is not unusual for the Aschheim-Zondek test to be positive.

These tumors often are found to be bilateral; extremely invasive of surrounding pelvic structures. They metastasize early and widely, especially to the lungs. Post-operative roentgen therapy is indicated, not only locally, but to the abdominal or aortic lymph node drainage as well, or to remote metastases when demonstrable.

Teratomas of the ovary may be cystic or solid, and are similar to teratomas of the testicle and may metastasize by way of the blood stream. They usually occure in young females, occasionally in children. The sypmtoms produced are due to pressure pain of the mass in the pelvis. Sometimes slight vaginal bleeding may occured. In contrast to the cystic type, the solid type of teratoma may be malignant, being composed of several types of adult and embryonal components. The adult formations are similar to dermoids, developing either unilaterally or bilaterally, and are often pedunculated, and therefore not difficult to remove. Most of these tumors are definitely radio-resistant, except those composed largely of embryonal forms. Since most have both adult and embryonic tissues, the latter be responsible to irradiation are quite variable, depending upon the histologic composition of the primary or metastatic growth. Of course, operation is necessary. Immediate post-operative roentgen therapy is of doubtful benefit, though it may be necessary for the rapidly growing embryonal forms or for metastases.

Sarcomas of the ovary are quite uncommon and of several different histologic types, developing from the interstitial tissues. They may occured at any age and usually present symptoms and signs of pressure within the pelvic cavity. They can often be cured surgically because of their limited growth. Roentgen therapy may be necessary if there is extension, if post-operative recurrence develops or for remote metastases for palliation.

Krukenburg tumors are associated with primary malignant tumors of the gastro-intestinal tract. These neoplasms are not primary in the ovary, but metastatic. Treatment is surgical, including removal of the pelvic mass and primary tumor, if possible. Roentgen therapy is of little or no benefit for these metastatic neo-

plams.

Patients to be given roentgen therapy for cancer of the ovary must be individualized. There can be no standard technique or dosage. The radiologist is responsible for the procedure. He must give consideration to the type of growth; its extent; and the physical condition and size of the patient.

Many types of roentgen therapy apparatus are available, the mrost common being in the range of 200 kilovolts, which is satisfactory for most cases. The supervoltage types offer only greater quantity of rays of higher penatrability. There is nothing unique or mysterious about their carcinoidal effects. Nevertheless, such apparatus is an advancement in the treatment of deep seated malignant conditions, but it has limitations. A primary growth may be destroyed by irradiation, but when the disease has become disseminated, not even the most powerful apparatus will effect a cure.

In conclusion, in my opinion the treatment of ovarian cancer is primarily surgical and roentgen therapy is a valuable adjunct because:

(1) the diagnosis of ovarian malignant neoplasms often is difficult and the type and extent of the disease often cannot be determined until surgical exploration and histologic examinations have been made;

(2) because it is essential for the radiologist to know the type and extent of the disease before deciding upon whether or not irradiation may be beneficial, and how it should be given, if indicated.

DEMEROL(R) AS AN ANTI-SCORPION THERAPEUTIC AGENT

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In recent years, several children who died from apparent scorpion envenomization had received Demerol(R) as a therapeutic agent. In addition to this, it was observed that some of these children had not reacted in a manner typical of a child who has received a lethal dose of this venom. These combined observations suggested the need for an investigation into the combined effect of Demerol(R) and **Centruroides sculpturatus** Ewing scorpion venom in the mammal.

MATERIALS AND PROCEDURE

Mature, albino rats were used as the experimental animals, because the reaction of this animal to C. **sculpturatus** venom parallels that of the child very closely. The therapeutic agent tested was Demerol (R) solution containing 50 mg. per milliliter.

In order to get a sufficiently wide range of action, three groups of rats were given respectively, .18 mg., .15 mg., .10 mg., per 100 gram body weight of C. **sculpturatus** venom. The rats of each group then were given respectively, 20 mg., 15 mg., 5 mg., 2 mg., 1 mg. of Demerol(R). In order to determine a lethal dose of Demerol(R) on these animals control animals were given the following series of dosages: 40 mg., 30 mg., 25 mg., 20 mg., 15 mg., 10 mg., per 100 gram body weight.

In each test animal the venom was first injected and immediately followed with Demerol(R). Both were administered subcutaneously in the groin.

RESULTS

All the venom used throughout the experiment came from lot number 62-73, whose LD_{50} was .15 mg. per 100 gram body weight of the albino rat. Out of the ten rats used, fifty per cent given this venom recovered, while the lethal-time for those that succumbed averaged approximately 80 minutes. An approximate MLD for Demerol(R) was established at 25 mg. per 100 gram rat body weight. At this dosage, the lethal-time ranged from 37 to 91 minutes. All rats given only 20 mg. per 100 gram body weight, or less, recovered.

From the accompanying table, we may observe the following: (Table on page 52.).

1. In the 0.18 mg. group of rats, the lethal-time is shorter for those rats receiving from 5 to 20 mg. of Demerol(R) than for those receiving no Demerol(R).
2. In the LD_{50} group (0.15 mg.), all rats receiving Demerol(R) died, whereas, if the therapeutic agent had no untoward effect, only 50 per cent of the animals should have succumbed. In addition to this, the lethal-time averaged less than 32 minutes, in contrast to 80 minutes for the rats receiving only venom.

*Assisted by M. J. Hagler.

3. In the 0.10 mg. group of rats, only one reccoverecl, whereas all should have recovered. Also, the lethal-time average is 50 minutes, less than the lethal-time of the LD_{50} rats.

EFFECT OF VARYING DOSAGES OF DEMEROL(R) AND CENTRUROIDES SCULPTURATUS VENOM ON THE ALBINO RAT

Rat Weight In Grams	Venom mg/100g Body Wgt.	Demerol(R) mg/100g Body Wgt.	Lethal Time*
179	0.18	none	45
314	0.18	none	37
152	0.18	20.0	20
173	0.18	15.0	30
129	0.18	10.0	26
216	0.18	5.0	35
189	0.18	2.0	59
168	0.18	1.0	60
166	0.18	0.5	103
190	0.15	20.0	10
314	0.15	20.0	31
129	0.15	15.0	29
269	0.15	15.0	7
219	0.15	10.0	53
171	0.15	5.0	53
183	0.15	2.0	44
248	0.15	1.0	27
241	0.10	none	Recovered
191	0.10	20.0	18
265	0.10	15.0	88
246	0.10	10.0	63
235	0.10	5.0	37
241	0.10	2.0	46
171	0.10	1.0	Recovered

*Elapsed time in minutes from injection of venom and/or Demerol(R) until death.

While determining the lethal dose of Demerol(R), we were greatly impressed by the similarity of symptoms produced by it to those produced by C. sculpturatus poisoning.

CONCLUSIONS

Demerol(R) appears to act synergistically with Centruroides sculpturatus venom in producing a lethal effect on albino rats. Consequently, Demerol(R) should be considered as contraindicated as a therapeutic agent for individuals under the influence of Centruroides sculpturatus scorpion venom.

SUMMARY

Albino rats given Demerol(R) after being envenomized by Centruroides sculpturatus scorpion toxin died more rapidly than when given either substance alone.

Those given a definite lethal dose (0.18 mg per 100 gram body weight) died more quickly with Demerol(R) dosages from 5 to 20 mg. per 100 gram body weight than those receiving venom alone. Rats given an LD_{50} followed by Demerol(R) of 1 to 20 mg. dosage all died, whereas theoretically without Demerol(R) only 50 per cent should have died. Those rats given a sublethal dose of venom followed by Demerol(R) all succumbed except one, which received only 1 mg. of the supposed therapeutic agent. Parts of the syndrome of a lethal dose of Demerol(R) closely parallel that produced by Centruroides sculpturatus venom. From the results obtained, it is concluded that it would be unwise to administer Demerol(R) to a mammal envenomized with Centrroides sculpturatus toxin because of an apparent synergistic action between the two agents.

PHOENIX *Clinical* CLUB

The Case History in this discussion is selected from the Case Records of the Massachusetts General Hospital, and reprinted from the New England Journal of Medicine. The discussant under Differential Diagnosis is a member of the staff of the Massachusetts General Hospital. The other discussants are members of the Phoenix Clinical Club.

CASE RECORD NO. 1

A twenty-three month old Portugese-American girl was admitted to the hospital because of dark colored urine.

One week before entry she began to void dark urine and to pass light-colored stools. For two days previous to entry, she was feverish, and it was noted that the abdomen was enlarged. She had no vomiting, diarrhea or other systemic or constitutional symptoms.

The family history was not contributory. The patient was a full-term, normaliy delivered infant who had received an adequate diet and had

undergone normal growth and development.

Physical examination:—A well developed and well-nourished child whose breathing was rapid and shallow, but regular. There was moderate icterus of the skin and sclerae. Shotty lymph nodes were palpable bilaterally in the cervical and inguinal regions. The heart and lungs were normal. The abdomen was protuberant and tense. The liver edge was palpable at the level of the umbilicus. There was no spasm or tenderness. The spleen and kidneys were not palpable and no fluid wave was obtained. Examination of the nervous system was negative.

Temperature 99.6, pulse 140, respirations 28.

Several samples of urine were deep brown, with moderate amounts of bile. There were slight traces of albumin on several occasions with repeatedly negative sediments. The urine was free of urobilinogen. Blood:—RBC, 3,560,-000to 5,100,000, with corresponding Hgb. determinations between 69 and 83%; white counts between 13,000 and 19,000 with normal differentials. Blood Hinton negative. Repeated blood cultures negative. Venous clotting time 7 minutes, with a normal clot retraction. Fasting blood sugar was 182 mg. per 100 cc.; blood cholesterol 268 mg. The van den Bergh reaction was bipbhasic; the NPN of blood serum was 28.7 mgm. The stools were constantly clay colored. Repeated brucellergin tests and tuberculin tests in dilutions up to 1:10 were negative. Investigation of sputum for fungi was negative.

Roentgenograms of the skull and extremities were negative, and those of the lungs showed a moderate amount of diffuse, fine, mottled peribronchial infiltration. On repeated examinations of the chest, the infiltration became more diffuse over a two week period and then remained unchanged until three months later, when the lung fields became more vesicular and emphysematous.

The patient remained in the hospital for four months. During this time she ran an intermittent lowgrade temperature, with occasional bouts of fever up to 103 F. Her condition remained essentially unchanged except for a slight but steadily progressive loss of weight. Jaundice persisted. Two and a half weeks after entry, the spleen became palpable. Three and a half months after entry, a lymph node biopsy was interpreted as showing chronic nonspecific lymphadenitis. Four months after admission, an exploratory laparotomy was performed. Although the patient apparently withstood the procedure quite well, death occurred on the first postoperative day.

CASE NO. 1-A

In June, 1946, at 30 years of age, a male clerk first came under hospital care at another institution, complaining of severe thirst, urinary frequency and polyuria, and loss of appetite, strength, & weight.

Seven years earlier, in 1939, he had received surgical care for an infection of a foot, the exact nature of which is not known. At that time, and for several years thereafter, he was employed as a metal grinder. In 1942 he was first troubled by a chronic discharge from the right ear, and by a disorder of the scalp diagnosed as seborrheic dermatitis. He served with the Navy between 1943 and 1945, spending six months of that period in the South Pacific. His only illness during that time was a fever of unknown etiology lasting 2 days.

His present illness began in April, 1946, with insidious onset of increasing thirst, polyuria and nocturia. Within three weeks he experienced loss of appetite and strength. At the time of his first hospital admission in June, 1946, he had lost 7 lbs. in weight and was consuming six quarts of fluids daily. On this admission his heart and lungs were normal, both on physical and x-ray examination. At this time the specific gravity of his urine never exceeded 1.002. A PSP test showed 75% of dye excreted in two hours. Blood counts were normal. He was placed on pitressin therapy, which successfully controlled his fluid output during the ensuing year.. In July, 1947, he was examined at a large clinic, where the first skull films were secured. These were found to be negative. His medica tion was adjusted and he was discharged.

The first of numerous and repeated episodes of respiratory symptoms appeared two months later in the form of mild head cold with sore throat nasal discharge, and slight cough. The cough persisted, and for a brief period was productive of mucoid sputum. This was followed by sudden, severe, lancinating pains in the right lower chest, lasting 5 days. A month later he experienced similar pains in the left chest. By November, 1947, distressing dyspnea and malaise were becoming evident.

First Admission:—In December, 1947, because of chest pain, dyspnea and cough. Physical examination:—Bronchial breathing and coarse

rales at the base of the left lung. Roentgenograms showed a cyst-like fibrotic process in both lower lobes. White count, 7300 with 83% polys. Sed. rate, 35mm. in one hour (Westergren). The EKG showed no deviation from normal. Sputum and gastric washings negative for T.B.

Patient was transferred to a VA hospital during his second hospital week. Cough was then minimal but the temperature mounted several times to 103F. It was discovered that there had been a weight loss of 17 lbs. in the preceding 8 months. Scattered over the scalp were a numbber of hemorrhagic, ulcerating lesions measuring from 1 to 3 mm. in diameter. At the lung bases were dullness to percussion, absent to diminished breath sounds, and decreased fremitus. The vital capacity was 1.2 liters (normal 4.3), and chest films showed interstitial fibrosis in both lower lobes and the right middle lobe. Roentgenograms of the skull were negative. The white cell count was now 11,900 with 72% polys. Sed rate was 28 mm. in one hour. The cold agglutination test was negative. Three gastric washings were negative for acid fast bacilli. From the left chest, 200 cc. of bloody fluid were removed, containing numerous neutrophils, but negative bacteria and fungi. Bronchoscopy showed reddening of the bronchial mucosa, but aspirated secretations, when cultured on diverse media and studied by Gram, Papanicolaou, and acid-fast stains, were negative. Thoracotomy was refused by the patient. Before discharge on ec. 2, 1947, an unsuccessful diagnostic attempt to discontinue pitressin was made.

The patient returned to work as a clerk and was troubled only by a mild cough until February, 1948, when he was readmitted for a brief period to the VA hospital because of severe dyspnea. His vital capacity on this admission was unimproved. A right bronchogram showed good filling and some displacement of the middle and lower lobe bronchi, and no bronchiectasis. Only in the upper lobe did the oil enter the alveoli. (This displacement of bronchi seems to be away from lung periphery and toward the mediastinum: don't try to make a diagnosis on this finding. WWW).

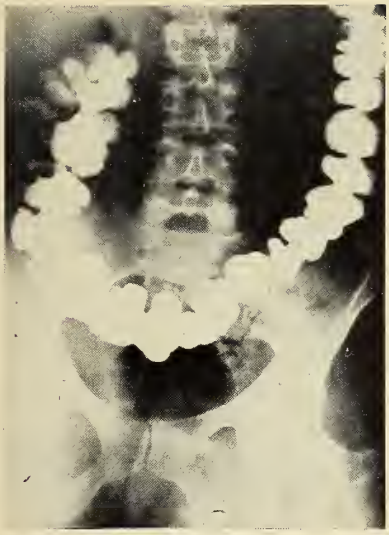
Continuing moderate cough and dyspnea with a sudden attack of violent coughing and right chest pain caused him to enter a third hospital in November, 1948. At this time he appeared chronically ill. He had tachycardia, and his temperature was 99° to 101°. On the forehead and chest were several small, scarred and pustular lesions. The right tympanic membrance was retracted and covered by purulent exudate. From this exudate B. proteus and E. coli were cultured. There were moist rales at each lung base and decreased breath sounds at the right base. Chest films were interpreted as indicating idiopathic pulmonary fibrosis with diffuse emphysematous bullae and partial right pneumothorax. Roentgenograms of the skull and bones of the hands were negative. WBC was 10,500 with 84% polys. Serum protein was 7.8 gm, with a reversed A/G ratio of 3.8/4.0. Complement fixation and precipitation tests for coccidioidomycosis and histoplasmosis were negative. Tissue taken for biopsy from one of the skin lesions showed many mononuclear phagocytes and a few round cells not characteristic of any specific disease. The pathologic diagnosis was chronic dermatitis. The patient was treated symptomatically. There was some improvement with 50 per cent absorption of the pneumothorax in two weeks. The 7th and last hospital admission was at this Hospital on Dec. 31, 1948. The patient was in extremis, with a temp. of 102.8, pulse of 120, and resp. rate of 64. There were coarse inspiratory rales throughout both lung fields, but heart sounds were of good quality. The Hgb. determinations showed 11 gm. per 100 cc. and the WBC was 12,500. A few red blood cells and pus cells in the urine. Fever continued, respirations grew more labored, coma intervened, and he expired on January 2, 1949.

DR. LOUIS B. BALDWIN

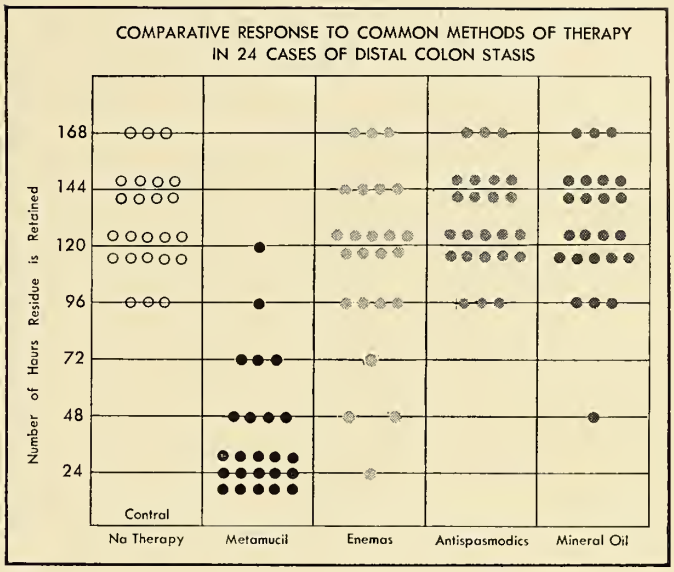
In my meagre experience at hunting birds, I have found that, when shooting with a double barrelled gun, it is advisable to fire at each one separately. So that is what I propose doing with the following two cases.

The first is that of a twenty-three month old Portuguese-American girl, who lived for four months after her admission to the hospital. She had an enlarged liver, jaundice, an elevated blood sugar and slightly elevated blood cholesterol. X-rays of the bones were negative, but those of the lungs showed a moderate amount of diffuse, fine mottled peribronchial infiltration, with a rapid evolution of the pulmonary changes. She ran a low grade intermittent fever and ventually the spleen became palpable. She died following an exploratory laparotomy.

Lymph node, sputum, and skin tests studies



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SEARLE *Research in the Service of Medicine*

*Barowsky, H.: A Roentgenographic Evaluation of the Common Measures Employed in the Treatment of Colonic Stasis. Rev. Gastroenterol. *19*:154 (Feb.) 1952.

seemed to rule out tuberculosis and fungus infection.

In this infant we have a disease involving primarily the liver and lungs with a rapid progressive course. We assume that the liver pathology and that of the lungs occurred at the same time, because, when she was admitted to the hospital there was apparently not enough pulmonary fibrosis to produce right sided heart failure with cor pulmonale which may occur after extensive pulmonary fibrosis, and which may result in enlargement of the liver and even jaundice. It is extremely unlikely therefore that this infant had bronchiolitis fibrosa obliterans. This is a severe, often fatal disease, charaeterized by widespread destructive lesions in the smaller bronchioles, followed by a rapidly progressive fibrosis. This disease may be produced by the inhalation of chemical irritants or may follow acute infectious diseases. Beryllosis probably can be classed with this general type of pulmonary condition.

We may also probably correctly assume that tuberculosis and the fungus diseases have been ruled out by the sputum studies and skin tests.

Cystic fibrosis of the pancreas must always be considered in an infant with abdominal symptoms and diffuse advancing pulmonary disease. But in these infants there are the characteristic, loose bulky stools and attacks of vomiting. The blood invariably shows a low cholesterol and a normal sugar.

Medullary neuroblastomas may occur in infancy and young adults, and although the metastasis occur early and may involve the liver and lungs there is usual involvement of the orbit and of the bones.

The next group of diseases to be seriously considered are the so called "lipoidosis" or the disturbances of the reticulo-endothelial system. There is no more intricate or bizarre chapter in medicine than that dealing with these conditions. To understand them one should have a basic knowledge of the physiology and chemistry of lipoid subbstances.

Among the lipoidosis there is the hypercholesterimic xanthomatosis with an elevated total blood cholesterol. For various reasons this condition does not apply to our case.

Then there is the normocholesterimic xanthomatosis; to this group belongs the Schuller-Christian syndrome, in which there are characteristically defects in the membranous bones, exophthalmos, and diabetes insipidus. The newer concept of this disease recognizes the pathological process as well as the multiplicity of symptoms making it preferable to use a descriptive term. It is now generally referred to as "eosinophilic xanthomatous granuloma." Through the histological studies of Holm, Teilum and Christiansen, it was demonstrated that the natural history of an eosinophilic granuloma comprises four phases:

1. A proliferative phase with accumulation of eosinophilic leukocytes.
2. A granulomatous phase.
3. A xanthomatous phase with nests and isolated foam cells.
4. A fibrous phase.

The generalized form of eosinophilic xanthomatous granuloma characteristically shows brain involvement with diabetes insipidus and exophthalmos, but in the generalized infantile form these symptoms are not reported and there may also be none of the bone changes, so that although early changes may be present they may only be demonstrated by histological examination at autopsy. Skin xanthoma of the "disseminata" type are often noted even in infants but may be absent. Early in the course of this disease the infant develops a cough and bronchitis, which are followed later by fever and signs of lung infiltration. There is marked shortness of breath and there may be cyanosis. The signs of circulatory failure become increasingly prominent and results in death. The lungs show chronic pulmonary fibrosis and diffuse bilateral fibrosis is revealed by x-ray. In some places the lung has a mottled appearance, resembling that in miliary tuberculosis. The superficial lymph nodes are often enlarged but may not show the characteristic foam cells upon histological study.

The liver and spleen were involved in 8 to 26 cases of Schuller-Christian syndrome mentioned by Rowland. In 7 of these cases the enlargement of these organs was never outstanding and even doubtful. Jaundice is not found in cases of the generalized form of eosinophilic granloma even when the liver is enlarged, because the lesions are only scattered through the liver without causing destruction of the organ structure or producing biliary cirrhosis.

In some cases the only organs involved may be the lymph nodes, liver, spleen and lungs without involvement of the skin and bones. Since these cases exhibit normal cholesterol values, only

chemical analysis and biopsy of the organs can reveal the diagnosis.

Gaucher's disese, also known as reticular and histiocytic cerebrosidosis is another one of the lipoidosis. But this infant does not have the symptoms characteristic of Gaucher's disease, in which, among other things there is a markedly enlarged spleen preceding enlargement of the liver.

Niemann-Pick disease or "reticular and histiocytic splenomyelinosis" must be considered in this infant for it is characterized by enlargement of the liver and spleen, and in the later stages by fever simulating infectious disease and extensive lung involvement, the x-ray of which is very similar to that of miliary tuberculosis. There is no increase in the blood cholesterol in this disease.

With this brief review of the lipoidosis that may apply to our case, it may be seen that none of them explain all the symptoms observed in this infant. However, the rapid course of the disease and the symptoms seem to be explained more readily by the generalized form of eosinophilic xanthomatous granuloma than by any of the other lipoidosis. It is to be noted that there have been atypical case of xanthomatous granuloma reported with jaundice.

The second case seems to have only one common denominator with the first one. They both showed extensive pulmonary pathology with marked pulmonary fibrosis. In the second case there developed a left hemothorax and partial right pneumothorax. In both these cases the changes in the lung progressed rapidly once they were demonstrable by x-ray studies. The second patient was 30 years old when he first showed symptoms of diabetes insipidus. But for four years previously he had a chronic discharging right ear and had a scalp disorder diagnosed as seborrheic dermatitis.

The chest x-ray was negative a few months after the onset of the diabetes insipidus and skull x-rays were negative over a year later. Seventeen months after the advent of polyuria and polydipsia he began having repeated episodes of respiratory symptoms in the form of mild head colds with sore throat, nasal discharge and slight cough. He also contracted pains first in one side of his chest then the other and become markedly dyspneic. Careful studies for tubercle bacilli and fungi were negative.

The obvious question is whether or not we can combine the skin condition, diabetes insipidus, and pulmonary pathology to represent a disease entity.

Can we be dealing with an example of eosinophilic xanthomatous granuloma? It is now well substantiated by many examples that in this disease there may be diabetes insipidus with pulmonary fibrosis alone or in combination with the dermatitis characteristic of xanthomatosis or any other symptoms such as the bone changes. It is to be noted that the skin lesions do not always show the characteristic lipoid containing xanthoma cells. There are, however, two points against the choice of this diagnosis. In the first place it would be unusual for no characteristic yellowish xanthomas to develop if this were a case of xanthomatosis, and in the second place the serum globulin is not increased in xanthomatosis. The normal serum Albumen is 4-5.2 mg. and th-e globulin is 1.3 to 2.7. In this case the Albumen is slightly depressed and the globulin is increased to practically double the normal figure with a reversed a/g ratio. The diseases in which the serum globulin is increased are the following: Multiple myeloma, pneumonia, active tuberculosis, subacute bacterial endocarditis, rheumatoid arthritis, osteomyelitis, pulmonary abbscess, lymphogranuloma inguinale, Kala-azar, Malaria, filariasis, schistosomiasis, leprosy, syphilis, sarcoid of Boeck the leukemias. It may be argued that in addition to xanthocromatosis this patient may have pneumonia or a pulmonary abscess to account for the increased serum globulin.

But we should be remiss if we did not consider the diagnostic possibility of sarcoidosis.

In the comprehensive monograph of Longcope he notes that sarcoidosis may be encountered at any age but usually first appears in young people between the ages of 20 and 40. Neither the aged nor the very young are exempt, for one of the reported cases was 80 years of age, while very young children are reported to have had the disease. The onset of sarcoidosis is generally so insidious that it may only be discovered in the course of a routine examination. There is commonly involvement of the lymph nodes, the skin, the lungs, but almost any organ or tissue may be involved. The disease may extend to the nasopharynx and the paranasal sinuses and penetrate the cribriform plate to the base of the brain. Invasion of the pituitary

gland its stalk or the hypothalamus has occurred early with the occurrence of diabetes insipidus. There is often wide spread involvement of the lungs and pleural effusions or spontaneous pneumothorax have been reported. Although with lung involvement there may be a rapid fatal course in sarcoidosis, the usual story is of remission or healing even when the pulmonary lesions are apparently far advanced.

The disease may have a protracted course with periods of exacerbation or in many instances there may be a spontaneous recovery. Pulmonary tuberculosis is a complicating factor in about 15 percent of the cases and may be the cause of death. The so called seborrheic dermatitis described in this patient is not characteristic of sarcoidosis, nor were later scarred and pustular lesions of the forhead and chest. Boeck originally described three forms of eruptions:

1. The first variety consists of small, firm nodules of waxy aspect with brown or bluish centers.

2. The second variety consists of large nodules, elevated above the surface.

3. The third type is deep seated and the surface is often covered with shiny white scales.

It is interesting to note that cutaneous lesions occur in only 50 percent of the cases. If the skin lesions in the patient under discussion were due to sarcoid, microscopic section should have revealed the typical collection of epithelial cells arranged as tubercles with giant cells, and surrounded by lymphoid infiltration.

What is my diagnosis after this discussion of various possibilities?

1. In favor of xanthomatous granuloma are the age of the first case, and the fact that in adults there may be a combination of Diabetes Insipidus and extensive lung fibrosis without any other symptoms. But in the discussion certain inconsistances were revealed, nevertheless, this is my diagnosis. .

2. In favor of Sarcoidosis in the second case, is the high serum globulin and the occurrence of spontaneous pneumothorax, and pleural effusion, but against it is the fact that although sarcoidosis has been reported in early childhood, I have been unable to unearth a single case in infancy. The symptoms described in the infant, on the other hand, are not inconsistent with those found in sarcoidosis.

CASE NO. 1 — 1952-53 DISCUSSIONS
DIFFENENTIAL DIAGNOSIS

Dr. Harry L. Mueller: We might pause for a moment to remark that this is a Portuguese infant and that the onset of the jaundice may therefore have been at an earlier date than was suspected, because these children are rather apt to have dark, olive skins.

This patient was in the hospital for four months. If she had a progressive constitutional disease, it is surprising that her candition did not become much worse during that period than is apparent from this history.

Painless, persistent jaundice, with clay-colored stools, and a large liver persisting for four months in a two-year-old infant certainly makes me believe that there was some unusual cause of obstruction to the biliary drainage system. The fact that the child exhibited no gastrointestinal symptoms at an age when almost any disease is accompanied by such symptoms makes me quite confident that there was no disease in the g.i. tract. I am ruling out catarrhal jaundice, which is the common cause of jaundice in a child, although quite rare at this age, because of the long course and the fact that there were no g.i. symptoms.

We must assume a point of obstruction and select the most likely point and cause for that obstruction. I should consider the portal fissure the most likely position and it appeals to me to place Hodgkin's disease in that region. The loss of weight, fever, pulmonary lesions and apparently normal blood picture, as well as the later development of splenic enlargement, are all consistent with Hodgkin's disease. This condition may present an apparently normal blood picture, occasionally has a leucocytosis and may have a relative lymphocytosis, which might explain why the differential count appeared normal, although there was a leucocytosis. The negative biopsy does not to my mind rule out Hodgkin's disease. Another lesion that should be given serious consideration is lymphosarcoma in the same region, although the course of the disease does not fit in so well. Lymphosarcoma is prone to metastasize to both the bronchial and the mediastinal lymph nodes and such metastasis must be considered. Tuberculosis in this position does not often cause pressure symptoms, and with a negative tuberculin reaction and the lack of any report of calcification I should be inclined to rule that out. We might stop here

and get an interpretation of the x-ray films.

Dr. Aubrey O. Hampton: This is a very unusual pulmonary picture. In the first examination it looks very much like miliary tuberculosis. In fact, that would be my unhesitating opinion if I saw this film alone. I should think that it was in the terminal stage and that the patient would die much sooner than in three months — in fact, three days would be more likely. However, the pulmonary picture changes markedly in three months and shifts into something entirely different. At first, there was a miliary process in the lung, and at the last examination there is what appears to be pulmonary fibrosis with emphysema. I have not seen pulmonary fibrosis that started out as a miliary process. In some respects, the progression is like silicosis, which can begin with miliary lesions, and later shifts into extreme fibrosis with blebs, but a child does not have silicosis. The marked increase in the anteroposterior diameter of the chest is like emphysema. Here is the shadow of what appears to be the liver. It is unusually distinct in the lateral view, and not so distinct in the anteroposterior view, but is certainly enlarged. I think that the spleen is moderately enlarged. That film was taken four months before death.

Dr. Mueller: Can you make out any kidney shadows?

Dr. Hamptom: The right kidney appears normal in size and shape. I do not see the left.

Dr. Mueller: Is there any evidence of a retroperitoneal mass?

Dr. Hamptom: No; and I do not believe that lymphoma would produce this chest picture unless a great deal of radiation had been given.

Dr. Mueller: Could Hodgkin's disease regress as the result of frequent x-ray and fluoroscopic studies?

Dr. Hamptom: This is a very diffuse lesion. All the lobes are involved alike. I do not believe we could produce that picture with radiation if we tried.

Dr. Mueller: Is there any evidence of enlargement or calcification of the mediastinal lymph nodes?

Dr. Hamptom: No.

Dr. Mueller: I do not know much more than I did before we started, except that I am a little more confused. I am convinced that this child had an obstructing lesion somewhere in the biliary drainage system. We must try to couple it with the pulmonary process and decide whether the primary lesion was in the lungs or in the abdomen.

Malignant tumors in infants of this age have a very rapid course, and I do not believe that the child would have been in such good condition at the end of four months if the metastases had been so widely distributed. There is also no evidence of a palpable mass, although that could be tucked up under the liver edge. Stone seems very unlikely, with the other aspects of the case, and of course is rare in a child of this age; I do not believe we have to consider is seriously. Foreign body should always be considered in children. Any foreign body that would obstruct the biliary tract would certainly cause some g.i. symptoms. Parasites should perhaps be more seriously considered than I had thought previously. Distoma and ascaris can both invade the common duct and intrahepatic ducts, as well as the cystic, and can cause obstruction. I should expect stool examinations to pick up some evidence of that. There is nothing in the record to show that the stool examinations were made with that in mind. One other parasite that ought to be considered is the hydatid cyst. The Portuguese are sheepherders. There is no mention in the record that these people had a sheep dog, but a hydatid cyst impinging on the hepatic duct could give a course similar to this. What type of lesion might result in the lungs from ruptured hydatid cyst, I am frank to say I do not know, but I do not believe that has to beb seriously considered. Tumors of the pancreas and g.i. tract and kidney are rather unlikely because they would present other g.i. or g.u. signs and symptoms, none of which were present in the entire course. Wilm's tumor must always be considered in a child and on the right side can cause obstruction of the biliary tract. It metastasizes early, and I doubt whether it can present such a picture as this in the lungs. It also metastasizes to bones, and x-ray films of the long bones were negative. Primary tumor of the liver itself seems unlikely. The liver was smooth; it showed no irregularities, and these tumors grow very rapidly and I believe would present other evidence of cancer in the patient.

Turning to the question of infection, syphilis should be considered. Against it are the neg. blood Hinton and absence of changes in long bones and other stigmas. Brucella and fungous infections, which have been quite well ruled out by the clinicians, would not present persis-

tent obstructive jaundice with clay-colored stools for that period. Liver abscess is, I think, a greater possibility than I originally considered. It possibly could be the source of multiple septic foci in the lung. It would be unusual for such foci to become fibrosed as these did, but this is an unusual case and we must consider every possibility. Abscess can run a fairly silent course in the lung itself and be very difficult to diagnose, and sometimes is diagnosed only by its metastatic lesions. Congenital anomalies are always a source of worry to the clinician or pediatrician. Liver cysts, cysts of the biliary ducts and stenosis of the ducts could cause half of this picture but not, I believe, the complicated picture in the lung.

I come back to my original thought, that to make a diagnosis in this case an exploratory laparotomy would probably have been necessary, and whether it was done for that reason I do not know. I should say that this child had obstructive jaundice. I do not know to what the lesions in the lungs are due. I had picked as my first choice Hodgkin's disease, but with this picture in the lungs I tend more to favor infection and should say liver abscess or localized infection in the portal fissure. I should also like to put in a guess, because of the patient's nationality, that there is a possibility of a hydatid cyst.

Dr. Mallory: Dr. Hamptom, would you be willing to make a diagnosis?

Dr. Hamptom: No; I have not the vaguest idea. I should like to know whether an oil spray was used. It could produce that picture in the lungs.

Clinical Diagnosis

Biliary cirrhosis, obstructive.

Pulmonary fibrosis, chronic, nonspecific.

Dr. Mueller's Diagnosis

Obstructive jaundice. Liver abscess? Hodgkin's disease? Hydatid cyst?

Anatomical Diagnosis

Hand-Schueller-Christian syndrome, with involvement of liver, lungs, lymph nodes, bone and so forth, causing interstitial emphysema (marked) and obstructive biliary cirrhosis.

PATHOLOGICAL DISCUSSION

Dr. Sidney Farber: (Assistant professor of pathology, Harvard Medical School; pathologist, Children's Hospital). The clinical diagnosis were obstructive biliary cirrhosis and chronic, nonspecific pulmonary fibrosis. The exact nature of the disease was not understood by the clinicians during the life of the child, and nothing was learned from the clinical studies. As Dr. Mueller pointed out in the clinical history, the child was not malnourished and was really more unhappy than desperately ill throughout most of the course.

At autopsy, a granulomatous process that involved many parts of the body but mainly the lungs, the lymph nodes, the liver and the bone marrow, and also the kidneys, uterus and tongue, was found. There was obstructive biliary cirrhosis secondary in part to pressure on the common duct caused by enlarged lymph nodes and a mass of granulation tissue, and in part to compression of the intrahepatic bile ducts by masses of granulation tissue and granulomatous involvement of the liver parencoyma. A considerable amount of fibrous-tissue replacement of destroyed liver parenchyma was present throughout the liver. The greater amount of obstruction was caused by pressure on the common duct. The extraordinary x-ray picture of the lungs was caused by diffuse destruction of the alveolar walls and infiltration of the interstitial tissues of the lungs by the same type of granulomatous process observed in the extrahepatic lymph nodes and in the liver. Secondary to the destruction of alveolar walls, an escape of air into the interstices of the lung occurred, causing numerous small blebs and pseudocysts widely scattered throughout all lobes of both lungs. Histologically, the granulomatous process in the various parts of the body was characterized by the presence of large mononuclear cells, the cytoplasm containing large or small droplets of lipid or cellular debris, varying degrees of fibrosis and a cellular reaction composed of lymphocytes, occasional plasma cells and, in rare places where necrosis was present, polymorphonuclear leucocytes. The lipid material in the large mononucleated cells stained readily by the scharlach red method, and some of the lipid was definitely doubly refractile.

The exact cause of this granulomatous process is unknown, and no further evidence of etiologic value was obtained from this post-mortem examination. Material from the lung and the liver was injected by a variety of methods into a number of laboratory animals without the production of any lesion. Bacteriologic study of the heart's blood and tissue from the liver and

spleen, by aerobic, anaerobic and partial tension methods revealed no growth The gross and histologic findings were consistent with what has been described as one variant of the Hand-Schueller-Christian disease, and what some writers have called LettererSiwe disease. Some patients with lung changes of the same type as those described here have had, in addition, numerous small skin lesions, which are often mistaken for tuberculides. Some of these patients have had destructive lesions of the skull or other parts of the skeleton. The clinical picture is often obscured by the peculiar localization of the pathologic process. In this patient, the icterus was the most significant part of the clinical picture and is explained by accidental obstruction to the outflow of bile by involvement of the extrahepatic lymph nodes. Some patients have severe destruction of the petrous portion of the temporal bone. After operation, a foul purulent exudate, which may persist for weeks or months, may be found, bacterial infection being of only secondary importance.

A study of material obtained at operation and at autopsy of patients of the type under discussion and from patients with less dramatic visceral involvement, or with lesions limited apparently to the skeleton, has forced me to adopt a working hypothesis that Hand-Schueller-Christian disease and the condition that has come to be known in the last year or two as eosinophilic granuloma of bone or solitary granuloma of bone are all variants of the same disease. Certainly it is generally recognized that the classical Hand-Schueller-Christian triad of exophthalmos, diabetes insipidus and skeletal involvement represents but one manifestation of the basic pathologic process. The disease appears to be a self limiting granuloma. Of greatest consequence in the prognosis is the anatomic localization of the lesions.

A Physician: Are the lesions radiosensitive?

Dr. Farber: Yes; we have not had very much experience, but we have learned that the bone lesions particularly are extraordinarily radiosensitive. At this time, we have a patient on the wards of the Children's Hospital with liver involvement similar to that of the patient under discussion today. The liver is receiving radiation therapy.

A Physician: Why did they operate?

Dr. Farber: The operation was performed in part to relieve biliary obstruction, if possible, and in part to find out the nature of the pathologic process.

Second Case was reported by Dennis and Rosahn, in The American Journal of Pathology, July-August, 1951, pp. 627 ff. in paper entitled "The Primary ReticuloEndothelial Granulomas" as an atypical instance of Letterer-Siwe's disease.

POST-MORTEM EXAMINATION

A necropsy was performed 4 hours after death. There was slight cyanosis of hands and face. On the chest and scalp were several scattered, superficial, papular and ulcerated lesions having a diameter varying from 1 to 3 mm. The lesions on the scalp wbere confined within the hairline. They were scally and a few were hemorrhagic. Those on the chest were scarred. There were dense and delicate, shaggy adhesions uniting the pleural surfaces bilaterally. The pleura was dull, markedly thickened, and speckled greywhite with scattered hemorrhagic mottling, particularly over the lower lobes of lungs. There was no free fluid in the peritoneal cavity and the peritoneal surface was glistening.

The right lung weighed 655 gm. and the left lung 660 gm. External palpation revealed many scattered, nodular zones. The cut surface of both lower lobes, the right middle lobe, and the lower portions of the upper lobes presented many small and large, irregular, ramifying and intercommunicating cystic spaces and canals. These varied in diameter from a few- millimeters to several centimeters. They were lined by a shiny or dull, grayish white surface, and contained either air or a light muddy-brown fluid. External to the cysts the tissue often was dense and fibrous. Many of the cysts seemed to arise from nodular lesions. Bridging the cysts were intact bronchioles and blood vessels. Attempts to demonstrate a communication between the bronchioles and the cystic spaces, by injecting air or water under pressure into the bronchioles, were unsuccessful. Most of the upper lobe parenchyma was firm and consolidated, the cysts having formed in proximity to the hilum. Small emphysematous blebs were noted on all pleural surfaces, and were most numerous at the apices. The only parenchymal tissue spared by the disease was in the superior margins of the upper lobes. The lumina of the bronchi contained abundant foamy, serous fluid.

No gross changes in heart, except right-sided hypertrophy and dilatation. Spleen was congest-

ed with a taut, thickened capsule. The liver and kidneys were congested. Hilar and adjacent mediastinal lymph nodes were enlarged, soft and discrete. Anterior lobe of pituitary slightly enlarged.

MICROSCOPIC EXAMINATION

Lungs. The principal change in the lungs was a widespread, infiltrative, cellular proliferation arising from peribronchial and interstitial tissues. The cells extended irregularly in all directions into the surrounding lung parenchyma, completely replacing the latter in large areas of the lower lobes. The process varied from dense, compact, cellular replacement of all alveolar tissue, as seen in the lower lobes, to small groupings of pleomorphic cells scattered between large patches of dilated, ruptured and collapsed alveoli. The infiltrative process extended into the interstitial tissue adjoining the alveolar walls. The cysts were irregular in contour and seemed to be formed from a central breakdown of the denser cell masses. The cyst walls frequently were very wide, and were without a true epithelial lining. Most of the larger cysts were empty, and smooth-walled, as if air-containing. Others had roughened, even ruptured, walls and contained free, large mononuclear cells and neutrophils. Intact bronchial and vascular structures, enclosed by a thin collar of fibrous tissue, occupied some of the cyst cavities which sometimes were in direct continuity with alveolar spaces.

The cellular changes were pleomorphic, but the predominant cell was a large mononuclear histiocyte, measuring up to 30 microns in diameter. The nucleus was large, vesicular, well defined, and generally basophilic. As a rule the nuclei were round or ovoid, but some were notched, twisted, bent or reniform. Nuclear chromatin sometimes was quite distinct, with a definite reticular pattern. In a few sites mitotic figures were detected. The cytoplasm was pale pink, occasionally finely granular, with irregular shape and indefinite margin, and usually with a smaller diameter than that of the nucleus. Frequently the cells were tightly packed in massive sheet-like or nodular aggregations. Characteristic lipoid granules and doubly refractile bodies were not seen. Mingled with the histiocytic cells were varying numbers of neutrophils, eosinophils, lymphocytes, and a few giant cells. The last appeared to represent fusion of mononuclear cells, and they frequently contained phagocytized cell fragments. They varied in size from two to four times that of the average mononuclear cell. Fibroblasts were present in some areas. Although fibrous tissue was found in and around the more advanced lesions, it was seen also to accompany small groups of infiltrating cells.

Denuded mononuclear cells were present within a few alveoli, bronchioles, venules and arterioles. Groups of these cells invaded and successfully penetrated bronchiolar, venous, and arteriolar walls. Generally, the lesions were extremely vascular.

Hilar Lymph Nodes. Germinal follicles were reduced in size and number. They were compressed by marked proliferation of the cellular process within the sinusoids. Large mononuclear cells, numerous eosinophiles, histiocytes, and giant cells were evident. The capusules were invaded by the histiocytic cells, and were fused. Generalized swelling and neutrophilic infiltration occurred. Skin: Reexamination of the original sections of skin taken for biopsy showed the typical mononuclear cells loosely scattered in the dermis. The heart, pituitary gland, hypothalamus, spleen, kidney, – showed small foci of mononuclear and histiocytic cells.

COMMENT AT START OF ARTICLE

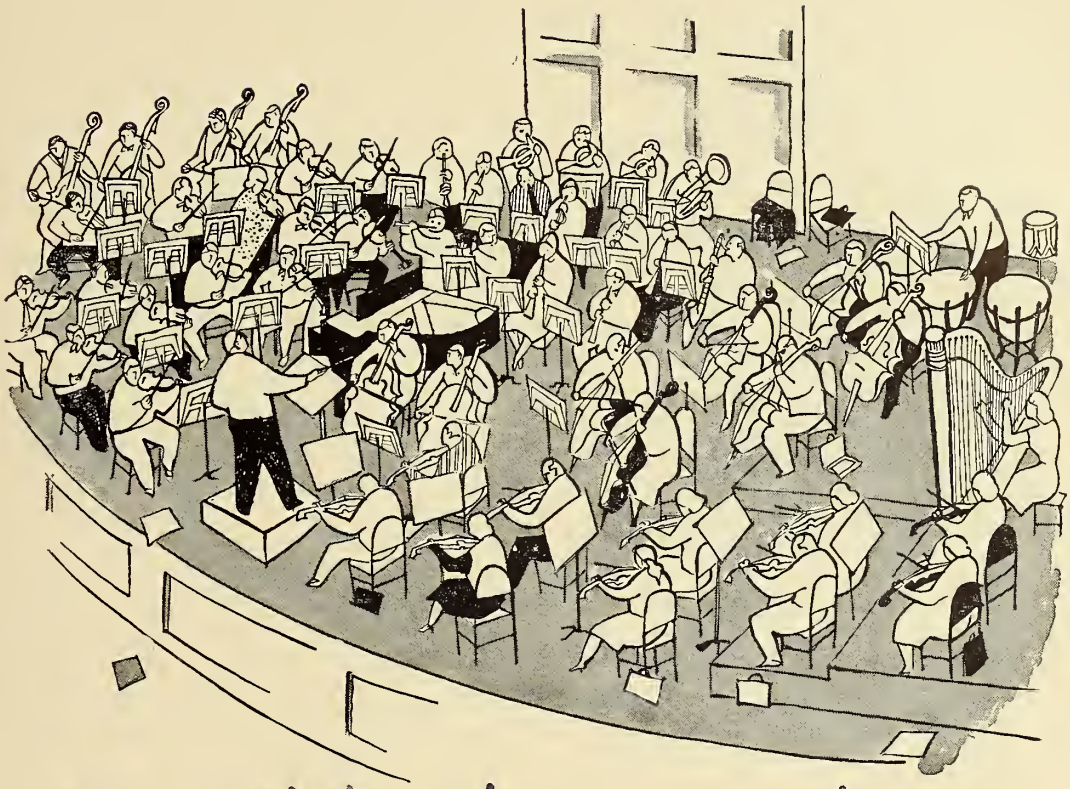
The widened concept of non-lipid reticuloendotheliosis as a systemic disease with three general expressions has received recognition within recent years. Separation of the Hand-Scheuller-Christian disease from the xanthomatoses was parallelled by the identification of Letterer-Siwe's disease and eosinophilic granuloma of bone. Subsequently, all three were grouped as clinical variants of a basic disorder of the reticulo-endothelial system.

The case reported is believed to be a case of non-lipid reticulo-endothelial granulomatous disease, although not closely corresponding to either of the three variants.

(It was Farber, who discussed the first case) who suggested in 1941 that Christian-Scheuller's disease, Letterer-Siwe's disease, and eosinophilic granuloma of bone were variants of the same basic disease process.

DISCUSSION

The case reported here was undiagnosed prior to the patient's death. Only after the histologic sections were reviewed did it become evident that the disease process was related to one of the three reticulo-endothelial disorders. In the past, the general rule has been to consider Letterer-



they could stage their own symphony

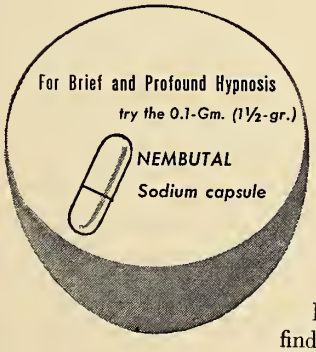
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Siwe's disease and eosinophilic granuloma of bone as conforming to a limited syndrome, while Christian-Schueller disease has been recognized as having a variable clinical course and anatomical pattern. As a result, the atypical case, especially of Letterer-Siwe's disease, has sometimes been mistaken for Christian-Scheuller's disease. Even though the atypical case may not fall clearly into any one of the three microscopic categories, it is the tendency at present to classify a new case on the basis of one of the three following general pictures.

Letterer-Siwe's disease follows an acute and malignant course and occurs predominantly in infants and children. The disease may exist for periods ranging from weeks to several years. There are no foam cells in the lesions save in occasional cases, usually those of extended duration. There is a hemorrhagic tendency. The "Christian-Scheuller triad" is rarely seen. Low-grade, continuous fever, moderate to severe secondary anemia, and a moderate leucocytosis or leucopenia appear. Lesions occur almost without fail in spleen, liver, lymph nodes, skeleton, and skin, and occasionally may be found in the lungs, central nervous system, thyroid gland, gastro-intestinal tract and other viscera, and in the thymus, an organ rarely involved by systemic disease. There is no response to treatment and the disease is invariable fatal.

Eosinophilic granuloma of bone has a benign course. The general health remains good. The disease occurs predominantly in infants, children and young adults under 20 years, altho patients up to 58 years old have been recorded. Majority of cases are in males. The duration is brief, though sometimes the process will recur or become chronic. Only rarely are lipid cells seen. Symptoms and signs are meager: some local tenderness, occasional weight loss, variable eosinophilia. Single or multiple bone lesions are present and visceral extension is infrequent. Lesions may develop and heal rapidly. The prognosis is good, as healing of lesions is spontaneous or follows surgical or roentgenological treatment.

Christian-Scheuller's disease is a chronic process, with insidious onset, and with extreme variation in course, localization, and clinical manifestations. The patient usually is an adult, although many instances in children are known. Either sex is involved. The disease lasts for many years. Lipoid cells are present at some time during the course of the disease. Clinical findings depend on the tissues involved, and are not specific, although exophthalmos and pituitary diabetes from bone lesions are frequent. Although the skeleton is the chief system attacked, almost any organ of the body can be damaged directly. The mortality is about 70 per cent. In the very young the disease may have a rapidly fatal course.

The three reticulo-endothelioses are histologically similar with hyperplasia of macrophagic cells and no indication of anaplasia or suppuration. Common to all is the large (15 to 40 microns), pale, polygonal, sometimes round or elongated mononuclear cell, which is present in large numbers and is often phagocytic. The nucleus is large, single, vesicular, oval or indented, sharply outlined, and often excentric. The cytoplasm is pale, dense, homogeneous, eosinophilic usually but occasionally basophilic or neutral and frequently poorly outlined. Small multinucleated giant cells, with four to ten nuclei, sometimes phagocytic, are occasionally present. Reticulum fibers are increased.

Certain histologic features, when present, tend to distinguish the three syndromes. Eosinophilic granuloma of bone is found as a compact tumor enclosed by a fibrous and bony capsule, starting in the medulla and tending to expand and to erode. Letterer-Siwe's disease usually contains discreetly arranged cells in nodular or diffuse formation. Christian-Scheuller disease is basically a nodular lesion, and foam cells are intermingled with mononuclear cells, or occur in compact masses. The nuclei may contain lipid droplets, or the cytoplasm, lipid crystals. If proliferative and granulomatous stages only are seen, as in an early lesion, foam cells may be absent and mononuclear cells and eosinophils predominate.

In the case reported the histologic changes have been described. In summary, the predominant cell was a large mononuclear histiocyte with a vesicular basophilic nucleus. Small giant and other inflammatory cells were found. There were areas of necrosis and hemorrhage. The lesions varied from the young proliferative to the older fibrosing type. In places the reticular network was increased and altered. Doubly refractile bodies and foam cells were not found. Lymphoid tissue was reduced. Depending on the organ the lesions had a nodular or diffuse character. In general, the microscopic findings

resembled those noted in the reticulo-endothelial disorders, but they were most like those found in Letterer-Siwe's disease. Yet the distribution of lesions did not conform to the usual picture of that disease.

The organs involved were lung, pituitary body, hypothalamus, skin, heart, kidney and lymph nodes. Pulmonary lesions have been described for all three syndromes, occurring as widespread, interstitial infiltrations. They tend to be fibrotic in Christian-Scheuller's disease, and finely nodular in eosinophilic granuloma of bone. Nodulation is common to all. Emphysema and polycystic pulmonary changes within nodular areas, and spontaneous pneumothorax, are recognized.

The diseases under discussion need to be differentiated from several other disorders. The lesions of Hodgkin's disease, mycosis fungoides, monocytic leukemia, tuberous sclerosis, Boeck's sarcoid, multiple myeloma, xanthoma tuberosum, and other diseases.

The thesis of a fundamental pathologic disorder which is responsible for the three accepted clinical variants and also for the numerous atypical cases which do not follow the prescribed pattern of these variants suggests the advisability of abandoning the present eponymic designations. Instead it is proposed that there be adopted a single all-inclusive term which gives cognizance to the currently unidentified etiologic factor or factors. Such a designation is *primary reticulo-endothelial granuloma.*



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THE *President's* PAGE

SCIENTIFIC PROGRAM COMMITTEE

AN ADVANCE OUTLINE OF THE 1954 SCIENTIFIC PROGRAM HAS BEEN FORWARDED TO ME, WHICH REVEALS THAT OUR SCIENTIFIC PROGRAM COMMITTEE HAS BEEN HARD AT PRODUCTIVE WORK. IN DUE COURSE YOU WILL BE INFORMED OF THE FINAL ARRANGEMENT. SYMPOSIA TO BE PRESENTED BY FACULTY MEMBERS OF STANFORD UNIVERSITY, SCHOOL OF MEDICINE AND UNIVERSITY OF WISCONSIN, SCHOOL OF MEDICINE LOOK ATTRACTIVE AND SHOULD HAVE GENERAL APPEAL TO ALL OF US. THE LIST OF GUEST SPEAKERS IS EXCELLENT.

JUST TO REFRESH YOUR MEMORY, THE NEXT ANNUAL MEETING WILL BE HELD AT HOTEL SAN MARCOS IN CHANDLER, APRIL 25 THROUGH 28. THE FIRST SCIENTIFIC SESSION WILL BEGIN AT 10:00 A.M., MONDAY. NOW IS THE TIME TO MARK THESE DATES ON YOUR CALENDAR.

EDWARD M. HAYDEN, M.D., PRESIDENT,
ARIZONA MEDICAL ASSOCIATION, INC.

Editorial

ARIZONA MEDICINE
Journal of
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The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.
2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. (See MEDICAL WRITING by Morris Fishbein.)
3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.
4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.
5. Submit manuscript typewritten and double-spaced.
6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.

The Editor is always ready, willing, and happy to help in any way possible.

THE PHYSICIAN AND HIS INVESTMENTS

IN THE past few years much has been said and written about medical fees. Similarly considerable discussion has been devoted to the high ideals of the medical profession which among other things require the physician to look upon his work as a service to mankind rather than as a means to wealth. The increasing costs of medical care have been a concern to patient and physician alike and the present level of professional fees are justified by the statement that the physician is entitled to live decently, educate his children, and provide for the future care of his family and possibly himself.

Whether one accepts this philosophy or not most physicians will agree that under present circumstances and with even what should be an adequate income that it is extremely difficult to make an adequate provision for the future. It should be apparent that what funds are available for saving should be invested with great care. Individuals are so at the mercy of broad economic trends beyond their control that there are dangers in any type of investment whether from the standpoint of inherent worth or cheapening of the dollar. Nevertheless there are certain investments which are acceptable and basically conservative in character which except for some catastrophe should make it possible for the physician with a well thought out program and who saves regularly to accumulate an adequate estate. Examples of these are home ownership, insurance, first mortgages on good property, and mutual funds.

The continuing spectacle of professional people investing substantial sums in highly speculative ventures is extremely disturbing and not in keeping with the idealism previously stated. The fact that it is a recognized and long established characteristic of the profession makes it no more wise or acceptable. Equally disturbing is the fact that rather frequently young physicians are making such investments upon the advice or with the knowledge of older and presumably wiser members of the profession.

A rather delicate point also exists in connection with the propriety of the physician accepting managerial responsibilities in connection with business activities outside his profession. There can certainly be no criticism in Board of Director membership with financial or other institutions of impeccable character if the physician's training and aptitude are such that he can play a useful role in such an assignment. He should however carefully avoid relationships in which he exists as a figurehead perhaps to lend an appearance of respectability to ventures of doubtful moral value. He must doubly guard against situations in which his name is used with or without his knowledge in connection with the sale of securities to brother physicians or the general public.

LETTER TO THE EDITOR

IN MY capacity as recently-appointed Acting Director of The Arizona State Hospital, I believe that it is part of my function to inform the medical profession of the plans and programs of the hospital which should be of interest to them.

As the result of a recent meeting between the Arizona State Medical Association Advisory Committee to the Arizona State Hospital (consisting of E. A. Born, Chairman; John R. Green, Lindsay Beaton, Richard Duisberg, and William B. McGrath) and the Hospital Board of Control, the following letter was sent to the Judge and Clerk of the Superior Court of each County:

The Arizona State Medical Association Advisory Committee to the Arizona State Hospital recently met with our Board of Control. The meeting afforded excellent interchange of ideas and was productive of practical suggestions, included among which was the recommendation that we change our present manner of reporting discharges to the committing Court.

In the future, instead of the usual monthly report in which we have aggregated all patients discharged during the previous month, we shall send an immediate report as of the day of discharge to enable the committing Court (and the physician) to afford better follow-up than was possible under the previous system.

A further suggestions was made that a much better out-patient result could be obtained if the Court would then notify either the physician who had served at the time of the commitment, or the family physician who might be responsible for follow-up care. The physician who will care for the patient after his discharge from the hospital can obtain complete information by contacting the hospital directly. In this way they will receive a complete report and a summary of treatment and suggestions for after care.

We are adopting in January 1954 the enclosed form which will be sent you in triplicate to facilitate notifying the appropriate physician,

Cordially,

It has since been suggested that delay might be avoided if the discharge diagnosis were included in the foregoing letter. Consideration had been given to that point and also the inclusion of more detailed clinical information, but it was the opinion of the Hospital staff that in preservation of the confidential relationship which must exist as between doctor and patient, it would be better to make the foregoing information available only upon application of an authorized physician.

It is hoped that periodic conferences with the Advisory Committee may become a regular thing for we are certain that the results will be beneficial to all concerned. In the instance cited above, we anticipate being able to afford much better service to the family physician, and through him to the patient. This is a very tangible outcome of just one meeting between the Arizona Medical Association and the State Hospital.

The policy of the Hospital staff is to promote the attitude that the Hospital is a place for treatment, not merely a place to keep mentally ill people. Under this program, we begin our discharge planning at the time of the patient's admission. One result is to maintain the contact and interest of the relatives. We shall appreciate any suggestions which will forward this policy and promote its recognition by the public via the medical profession.

SAMUEL WICK, M.D.
Acting Director
Arizona State Hospital

MEETING NOTICES

20th ANNUAL MEETING, AMERICAN COLLEGE OF CHEST PHYSICIANS

June 17-20, 1954
San Francisco, California

THIRD INTERNATIONAL CONGRESS ON DISEASES OF THE CHEST

October 4-8, 1954 — Barcelona, Spain

SEVENTH ANNUAL POSTGRADUATE COURSE ON DISEASES OF THE CHEST

March 15-19, 1954
Philadelphia, Pennsylvania

AMERICAN GOITER ASSOCIATION

THE 1954 meeting of the American Goiter Association will be held at the Somerset Hotel, Boston, Massachusetts, April 29, 30 and May 1, 1954.

The program for the three day meeting will consists of papers and discussions dealing with the physiology and diseases of the thyroid gland.

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TOPICS OF *Current Medical* INTEREST

RX., DX., AND DRS.

By GUILLERMO OSLER, M.D.

THIS paragraph is a Horrible Example derived form two items in the December issue of ARIZONA MEDICINE . . . The editorial in that number asked "How Much Can One Believe?" about NEW METHODS AND MEDICATIONS, and warned everyone to go slow, take it easy, relax, and be sure of the facts . . . In the same issue, old cautious Guillermo Osler reported a scoop on a new San Francisco drug called 'Gathalone', a form of isoniazid. The preliminary results were teriffic . . . Already the usual flaws appear. Perhaps it is simply INH in a form which can be better tolerated. Quite possibly (Los Angeles people say) there IS cross-resistance, so that it would be of no use when sensitivity to INH is gone . . . Some days you can't believe a thing. We'll keep you posted, and warned (and be even more careful).

The use of COMPOUND F in ointment form is an intriguing therapy. It controls edema and erythema, arrests pruritis in some very tough dermic entities . . . Maybe by the time they synthesize it, and we can afford it ('Cortef' of Upjohn's is in tiny tubes at high price), we will know more about its limitations. All hormonal preparations are somewhat like TNT, and ointments are the same.

Many members of the American drinking public have gone over-board for "gin and tonic", a beverage long favored by British colonials, and composed of gin plus a quinine-containing charged water . . . A letter to the J.A.M.A. has recently described an unexpected hazard from this form of imbibing. The drink may protect you from malaria (especially with the incidence as it is in Phoenix and Tucson), but it may let you in for CINCHONISM . . . A case has been described in a man who drank several pints per day, with quinine at the rate of 30 mg., per pint . . . If your ears ring it may not be 'a friend talking about you', it may merely be time to change to Tom Collinses.

'MINNESOTA MEDICINE' published a wonderful retrospective issue last year on the occasion of the state's hundredth year of organized medicine. They had fifteen articles on medical progress, medical schools, surgery, obstetrics, and stories about whatever part of a century the various subspecialties have existed . . . They were real proud, and should be.

Five years ago ARIZONA MEDICINE published a unique symposium on 'Small Desert Animals', as one of its 'Case-Analysis' series. The various bites, stings, diagnosis, and therapy were all described . . . It was thereafter suggested here that a booklet or series of cards be published with the scorpion, et al, on one side of the page and medical data on the other side . . . Who would do it? It wouldn't be good advertising, it wouldn't pay, etc., etc. . . Have you seen the most recent Disney motion picture sensation? Nothing but the same thing (tho no medical data), and called "THE LIVING DESERT". The advertising is there, and one gets you five that Disney won't lose a nickle.

A small discovery, no bigger than a man's hand, has risen on the scientific sky. It may mean something larger in the future years . . . Coons, Leduc and Connolly have reported that the source of ANTIBODIES is the PLASMA CELL. .In rabbits, guinea pigs and mice the site of formation is in the spleen and lymph nodes . . . This gives a function to the obscure plasma cells, and it gives a hope that we may learn more fundamental facts about bodily resistance.

The name has been officialized, so that if you hear of 'VINACTANE SULFATE' it still will mean viomycin (or viomycin sulfate Ciba) . . . The drug is made by several companies, and originally came from actinomyces vinaceus. Its use is limited to tuberculosis, and to those cases where an extra or substitute drug is needed . . . The potency is somewhere between that of streptomycin and PAS, and it probably can best be used with another drug. It is slightly more toxic than the SM drugs, with allergies, renal effects, and neurotoxicity to be watched for.

To those who take it for granted that medicine lacks a time-honoured background on the west coast it might (and should) come as a jolt to read of a banquet given by the Los Angeles Orthopedic Hospital Foundation . . . Staff physicians who had served TWENTY YEARS OR MORE were given citations. .Thirty-four, repeat 34, such staff members were present and recognized . . . Ancient and honorable, same like Boston and Philadelphia.

The wife of a New England physician, writing in 'Medical Economics', makes two comments which have long seemed logical to us. One of them you can tell to your wife; it might be wise not to tell her the other . . . 1. Contrary to the old saw, the author believes she is LUCKY to be a doctor's wife when she is ill. Families of M.D.'s are NOT neglected; they get good care (but often don't take it) . . . 2. A doctor's wife should be

NOT FOR PROFIT

THE HOSPITAL BENEFIT Bulletin

Special Published Bi-Monthly by the Hospital Benefit Association, First Street at Willetta, Phoenix February, 1954

Question QUIZ
Do you know the answers?

Q. When I treat a Member of the Hospital Benefit Association who has Surgical Protection, am I supposed to charge exactly according to the schedule of fees paid by the HBA?

A. No . . . not necessarily. If your charge is under the amount paid by the HBA, you will, of course, receive full payment of your bill. If your charge exceeds the benefits to which the Member is entitled, you will bill the patient for that portion not paid by the HBA.

Q. Are there any cases where the surgeon charges exactly what the HBA will pay?

A. Yes. Many surgeons, when they learn that the patient is a Member of HBA, charge exactly according to the fee schedule. This way, they can be certain that they will get 100% of the amount they bill. Payment is quick, and the possibility of ever having to pay collection charges on the account is eliminated.

Q. Just how soon does the HBA pay surgical bills?

A. The check is sent within 3 to 5 days after the claim form is received from the doctor. And here's a situation where the doctors can help themselves. The sooner the claim form is filled in and returned to the Association, the sooner the payment can be made! Send in your claims promptly, and you will be paid promptly.

Q. Do any Members of the Association have Surgical protection without having a Hospital Plan?

A. No. The Surgical Plan is available only to members who have enrolled in one of the Hospital Plans offered by the Hospital Benefit Association.

Surgical Fees For Accidents Also Cover After-Care Costs

It has come to the attention of the HBA that many Members have not been receiving full benefits due them under the Surgical Plan. The most frequent cause of this is re-visiting the physician's office after emergency treatment for accident.

Let's use a typical example: a Member accidently receives a wound that requires debridement, with closure. He rushes to his physician's office for treatment.

The physician bills the HBA $10, the HBA pays it, and the case closed as far as the Association is concerned. However, the patient has to make two more visits to have new dressings and the stitches removed. The physician bills the patient $4 each for these visits, and the patient pays it, never realizing that the HBA would gladly pay. He actually is eligible for benefits totaling $20 for this type of treatment, including after-care.

The solution to this, as many doctors have found, is to make a claim to the HBA for what you figure the total cost of **all** the treatments will be, barring complications. If the charge for the first call is $10, and it looks like two more visits at $4 each will be needed, you should bill the HBA for $18.

And always remember: the Association **will** pay for treatment of accidental injuries in the physician's office, providing the treatment is performed within 24 hours after the accident.

MEET OUR DIRECTORS



Conrad T. Kleinman

Conrad T. Kleinman, prominent Phoenix attorney, has been a member of the board of directors of the Hospital Benefit Association since 1951. Bishop of the 8th Ward L.D.S., Kleinman is a partner in the law firm of Rawlins, Davis, Christy, Kleinman Burris, the firm that drew up the original incorporation papers for the Association.

Harvard Law Graduate

Kleinman graduated from the Harvard Law School in 1939. In 1934, he married Lucille Lamour, an Oregon girl who graduated from the University of Arizona. The Kleinmans have two boys, Larry, age 13, and Jan, age 10.



What do you mean, "Good News"? My name is MISS Mary Brown!

more careful in practicing medicine among her friends. Maybe her territory should be confined to one block (or 'square', as they say in the East). Even then she may run into other homestakes! . . . If the Women's Auxiliary reads this, we are only kidding.

An ancient New Hampshire country doctor (84 years of age) gives an odd personal opinion of what the public expects of medical care — Fifty years ago people would think a physician didn't know much if he couldn't cure them in 20 minutes, but now people do not expect the impossible . . . We'd have thought the reverse, what with everyone knowing about new drugs and new methods, or at least hearing about them.

The Wisconsin Anti-Tuberculosis Association makes a small joke while coining a slogan to protect school children. The WATA 'Crusader' changes the saying "An Apple for the Teacher" to "AN X-RAY FOR THE TEACHER" . . . It is odd that any place exists where there isn't an X-Ray for teacher, and regularly too. They could even add a jingle to their saying — "Christmas comes but once a year; so does a film for teacher dear".

Every now and then something in life becomes very complicated or obscure. Even when one does a 'double-take' it still doesn't make sense, and it seems as tho the world has left us behind . . . We have mentioned some of the 'real big' terms used in electronics, but it hardly seemed probable that the Nat'l. TB Ass'n. would give us the jive. They now have an appointed group of six called the "Committe on Definition of Income Subject to Percentage" . . . As my cousin Mortimer Snerd says, "Yup!"

This story concerns THREE DISSIMILAR PHYSICIANS and a recent medical convention (and, possibly, a bit of humor) . . . One of the physicians, since then doing clinical research in Paris, had an exhibit at the convention. It illustrated some of the work he had done to show that the PRESSURES IN A 'PNEUMO' SPACE do NOT vary directly and regularly with the atmospheric pressures outside the body. His tests had been made in elevators and airplanes, which is unusual enough, but his exhibit was an even more wondrous affair, with a juke-box-like machine and a manometer 10 feet high . . . The second physician is a catalyst. He likes to bring people together and observe what happens . . . The third M.D. was a quiet clinician, who, with his father, had once published articles on atmospheric pressures, flying, and pneumothorax. He also has, in a quiet way, a sharp eye and tongue . . . Doctor Number Two took Number Three to the exhibit of Number One where there were a number of observers watching the devices. Dr. One was introduced to Dr. Three and failed to recognize him. He proceeded to start the series of procedures which illustrated his theses. As one reaction followed the other, and finally the red indicator shot to the top of the huge manometer, Dr. One said, "Well! What do you think of it?" Dr. Three thought for about ten seconds, drew a deep breath, and said, "It sure knocks the devil out of Boyle's Law, doesn't it?"

TEST YOUR MEDICAL KNOWLEDGE

(This innovation was suggested by Dr. Oatway, and the questions selected by our reviewer. Twelve correct answers would be average, fifteen would be good; eighteen would be super, and twenty correct answers dug out of your own head would mark you as a medical genius. Answers will be found on page 74.).

Ques. 1. *What are streptodinase and streptodornase and for what conditions are they used in practice?*

Ques. 2. *Can you commit suicide by voluntarily holding your breath?*

Ques. 3. *What is the most fatal complication of polycythemia vera?*

Ques. 4. *What is the latest reported treatment for the symptoms developing after a bite by Latrodectus mactans?*

Ques. 5. *What limits the value of radioactive iodine in treating thyroid carcinoma?*

Ques. 6. *When operating upon elderly patients for acute appendicitis, what other important lesion should always be looked for, and why?*

Ques. 7. *What is the best drug for treating acute gout?*

Ques. 8. *What is the mechanism of syncope produced by coughing?*

Ques. 9. *What is the Cold Pressor Test and its diagnostic significance?*

Ques. 10. *What is the trade name of phentolamine and what is it used for?*

Ques. 11. *Right or wrong. "When most indicated, oral cholecystography is least reliable."*

Ques. 12. *What is the Hamman-Rich syndrome, and the latest treatment advised for it?*

Ques. 13. *Name ten conditions which produce solitary circumscribed shadows (lesions) in the lungs.*

Ques. 14. *At the present time what clinical conditions are grouped under the classification of "collagen" diseases?*

Ques. 15. *About what is the percentage*

incidence of trichinosis in the population of the United States?

Ques. 16. *What was the origin of the word "fee"?*

Ques. 17. *What is the significant difference, aside from tho amount of potassium ions, between potassium deficiency and potassium intoxication?*

Ques. 18. *Who is regarded as the "Founder of Occupational Medicine?"*

Ques. 19. *What is Tubalex, how administered and for what conditions?*

Ques. 20. *Is there a consensus of opinion about trauma and cancer in a causative relationship? If so, what is it?*

BOOK REVIEW

DISABILITY EVALUATION, Principles of Treatment of Compensable Injuries by Earl D. McBride, B.S., M.D., F.A.C.S. Assistant Professor in Orthopedic Surgery, University of Oklahoma School of Medicine; Attending Orthopedic Surgeon to St. Anthony's Hospital. Fifth edition, 1953, J. B. Lippincott Company, Price, $15.00.

THIS fifth edition contains many improvements over the previous editions of this well known standard reference work. The purpose of the volume is well stated in the preface to the first edition and is "To interpret the physiological and mechanical alterations arising out of injury to the motor structures to the human body, and to reasonably appraise and evaluate the extent of functional loss as it relates to the economic incapacity of the injured." This is undoubtedly a volume which should be in every practicing physician's reference library or readily available in some other convenient reference library. Most physicians, regardless of their field of practice, are called upon at some time or another for consultation in some industrial injury case and unless some reference work of this type is available or unless the physician has a wide experience in evaluating industrial disabilities, his estimate of his patient's disability is likely to be more in the nature of an intelligent guess than a scientific evaluation.

The various types of disability, together with the criteria for evaluation of the amount of disability present and with abundant illustrations showing the tests involved are all here and should be invaluable to the physician confronted with a disability problem. The widespread use of this text should lead to sound and consistent disability benefits.

PAN-PACIFIC SURGICAL ASSOCIATION SIXTH CONGRESS

Honolulu, Hawaii

October 7-18, 1954

DOCTORS are cordially invited to attend the Sixth Congress of the Pan-Pacific Surgical Association to be held in Honolulu, October 7-8, 1954 and are urged to make arrangements as soon as possible if they wish to be assured of adequate facilities.

An outstanding scientific program with over 100 leading surgeons, including sessions in all divisions of surgery and related fields, promises to be of interest to all members of the profession. An extensive social program is being developed for the doctors' families.

The Association office has been appointed as travel agent for those attending the Congress and it is important that all hotel and travel reservations be made through the Honolulu headquarters of the Pan-Pacific Surgical Association.

For Further information, please write to F. J. Pinkerton, M.D., Director General, PAN-PACIFIC SURGICAL ASSOCIATION, Suite Seven, Young Building, Honolulu, Hawaii.

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Ans. 1. *Enzymes produced by certain strains of streptococci. They have been used for the liquefaction of purulent and hemorrhagic exudates in closed cavities, in amebic abscess, in unresolved pneumonia, etc. (New Eng. Journ. of Med., Oct.* 15, 1953, *p.* 652.)

Ans. 2. *Cases are recorded but the method is not recommended as an easy or certain "way out." (New Eng. Journ. of Med., Oct.* 22, 1953, *p.* 698).

Ans. 3. *Myelogenous leukemia. (Brooklyn Hosp. Journ., Third Quarter,* 1953, *page* 135, *Clinico-Pathological Conference.)*

Ans. 4. *This is the black widow spider and the severe pain is due to muscle spasm. Latest treatment recommended for the pain from this spasm is d-tubocurarine chloride. (Ann. Int. Med., Sept.* 1953, *p.* 62).

Ans. 5. *The poor uptake of the iodine by most carcinoma tissue. (Schultz in Journal Lancet, Oct.* 1953, *p.* 403).

Ans. 6. *Cancer of the colon because acute appendicitis is a complication in* 10 *per cent of the cases of colon carcinoma. (Thomas in Texas State Journ. of Med.,* 49: 1953, *p.* 222).

Ans. 7. *There is no improvement over colchicine in acute gout. It is still the stand-by after* 100 *years. (Journ. of the Mich. State Med. Soc., Sept.,* 1953, *p.* 959). *(Also Haines in Southwestern Med., Nov.,* 1953, *p.* 409).

Ans. 8. *Acute diminution of supply pressure of blood to the brain. (Brit. Med. Journ., Oct.* 17, 1953, *p.* 860).

Ans. 9. *Testing the blood pressure before and after immersing the hand for one minute in ice water. If the B.P. rises more than* 20 *mm. systolic and* 15 *mm. diasyolic in a hypertensive condition, the suggestion is essential hypertension. If it fails to rise or does not increase more than* 20/15 *mm., better study the patient for possible pheochromocytoma. (DeCourcy,—Pheochromocytoma and the General Practitioner, p.* 35).

Ans. 10. *Regitine, and it is used as a test for a possible pheochromocytoma. (Emlet et al, J.A.M.A., Aug.* 11, 1951, *p.* 1383).

Ans. 11. *Right, because visualization usually fails when this examination is most indicated, — in the differential diagnosis of intrahepatic and extrahepatic obstruction. (Ann. Int. Med., Sept.,* 1953, *Keil, et als, p.* 479).

Ans. 12. *Diffuse interstitial fibrosis of the lungs. Corticotropin or cortisone reported as effective in abating symptoms, (by Schecter in Am. Rev. of Tuberculosis, October,* 1953, *page* 603. *See also report of case by Wilson in The Journ. of the Arkansas Med. Soc., Sept.* 1953.).

Ans. 13. *Pneumonitis, abscess, infarction, hydatid cyst, tuberculoma, coccidioidosis, brucellosis, oil granuloma, adenoma, carcinoma. (See Hodgson and McDonald, Diseases of Chest, Sept.,* 1953, *page* 289 *ff.).*

Ans. 14. *Systemic lupus erythematosus, rheumatoid arthritis, rheumatic fever, dermatomyositis, periarteritis nodosa, scheroderma; maybe others. (see article by Wells and Ross, Texas State Journ. of Med., Sept.,* 1953, *p.* 673.)

Ans. 15. *According to one writer,* 37 *per cent or more. (See article by Kushlan in Connecticut State Med. Journ., Sept.,* 1953, *page* 751).

Ans. 16. *Meaning payment for professional services, it is derived from the Anglo-Saxon word "feoh" meaning cattle, and goes back to the time before money, when cattle were a means of payment. (Ohio State Med. Journ., Sept.,* 1953, *p.* 818).

Ans. 17. *In deficiency the symptoms are due to cellular potassium depletion and the serum potassium concentration may be normal. In potassium intoxication, the symptoms are directly related to the extracellular potassium concentration, and not to the cell potassium content. (See article by MacPhee in British Med. Journ., Sept.* 5, 1953, *p.* 528).

Ans. 18. *Bernardino Ramazzini* (1633-1714), *who did his important work at the University of Padua. (See Industrial Med. & Surg., Sept.,* 1953, *p.* 403).

Ans. 19. *Trade name for d-tubocurarine; put up in pellets for sublingual administration and in supporitories for rectal administration. Used in muscle spasms, associated with a variety of conditions. (see article by Neff and Mayer, California Medicine, Sept.,* 1953, *page* 227.)

Ans. 20. *"The common lay belief that simple mechanical injury — as a blow or contusion — as a carcinogenic factor is denied." (See article by Pedden, in the Journ. of the Michigan State Med. Soc., April,* 1953, *page* 414).



PLAQUE PRESENTED TO THE ARIZONA MEDICINE JOURNAL AT THE ANNUAL MEETING OF THE ARIZONA NEWSPAPER ASSOCIATION

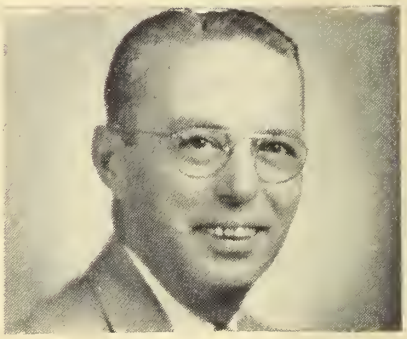
Stanley Blyth, of the Blake, Moffitt & Towne Paper Co., made the presentation to John N. McMeekin, publisher and business manager, of Arizona Medicine Journal.

Judging under the supervision of the faculty, school of Journalism, University of Southern California. Prof. Fred Coonradt, director.

Arizona Medicine Journal exchanges with all of the State Medical Journals, and 56 Foreign Libraries, Medical Schools, Journals, etc.

ARIZONA *Pharmaceutical* PAGE

PRESIDENT, AMERICAN PHARMACEUTICAL ASSOCIATION



Newell Stewart

THE PHARMACISTS of Arizona are proud to present to the members of the Arizona Medical Association the Secretary of the Arizona State Board of Pharmacy and of the Arizona Pharmaceutical Association, NEWELL STEWART, who has just been elected President of the American Pharmaceutical Association. Mr. Stewart will be installed into the office of the presidency at the 103rd annual meeting of the Association to be held in Boston, Massachusetts during the week of August 23rd, 1954.

We feel that Mr. Stewart's selection for this office by the pharmacists of America is a distinct honor, not only to him, who deserves it and not only to the pharmacists of our state, but to the many friends amongst the members of our allied professions.

Newell Stewart was born in Sistersville, West Virginia February 14, 1900 and attended elementary schools there. Following high school graduation, he spent two years in the College of Engineering at West Virginia University. He served in World War I and after this service returned to the University of West Virginia where he entered the College of Pharmacy and was graduated therefrom in 1923.

Mr. Stewart came to Arizona in 1925 and has owned retail pharmacies in Arizona from 1926 to 1952. He was appointed to the Arizona Board of Pharmacy in 1936 and served as its secretary in 1937, 1940 and continuously since 1942. He is editor of the Arizona Pharmacist and a past president of the Arizona Pharmaceutical Association and has been secretary of the organization for the past eleven years. In addition to his duties as secretary of the Board and Association, he is a member of the faculty of the College of Pharmacy at the University of Arizona where he teaches Pharmaceutical Jurisprudence. Mr. Stewart also continues to be a practicing pharmacist intensely interested in every phase of retail and hospital pharmacy. He has served as a member of the Board of Memorial Hospital in Phoenix, Arizona for the past nine years and has been solely responsible for the operation of the Memorial Hospital Pharmacy during that time. The Memorial Hospital Pharmacy is a model hospital pharmacy setup and has been copied again and again in hospital pharmacy planning in Arizona.

With his many interests and duties here in Arizona, Newell Stewart has still found time to devote to pharmacy on a national level. He is a past president of the National Association Boards of Pharmacy and served on the Executive Board of this group for three years. He was chairman of the House of Delegates of the American Pharmaceutical Association in 1950-51. He has served on many working committees during the past years in all the national pharmaceutical organizations of which he is a member, including, in addition to the American Pharmaceutical Association and, National Association Boards of Pharmacy, the American College of Apothecaries, the American and Arizona Societies of Hospital Pharmacists; the National Association of Retail Druggists and the National Conference of Pharmaceutical Association Secretaries. He holds membership in Rho Chi, National Honorary Pharmaceutical Fraternity, and Phi Delta Chi, pharmaceutical fraternity.

Mr. Stewart has always taken an active part in civic affairs; he served as Mayor of the City of Phoenix from 1942 to 1944, devoting time to war loan drives and community chest work during the time. He has been an active worker in the Boy Scout organization for many years; is a member of the Masonic order and the Shrine and served as Arizona Deputy Order of De Molay for several years. He has been an active member of the First Baptist Church in Phoenix for many years.

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Interesting Topics

PROBLEMS OF CANCER OF THE STOMACH

HODGSON and Kirklin, of Mayo Clinic, have one of their always fine, concise, papers in South Dakota Journ. of Medicine and Pharmacy, for January, 1953,—this time on the "Roentgenologic Diagnosis of Carcinoma of the Stomach." The paper is written for general practitioners. A few pertinent quotations will be better than attempt to abstract this paper.

"Gastric carcinoma represents one of the most difficult unsolved problems in medicine today."

"Because of the insiduous onset of the disease, the only hope of improving the discouraging situation is in earlier diagnosis . . . best accomplished by close cooperation between clinician and roentgenologist."

"Any patient more than 40 years of age who has even the most minor gastrointestinal symptoms" should have roentgenological examination of the stomach.

"Any neoplasm than can be seen macroscopically can be demonstrated by roentgenologic methods."

They then discuss the types of carcinoma of the stomach and roughly outline the technics of examination with certain pitfalls.

"Operation is the only treatment that offers any promise of cure . . . and the responsibility for early diagnosis must be shared by both clinician and roentgenologist." W.W.W.

———

PEPTIC ULCER. Medical Progress Review by Zetzel in two issues of The New England Journ. of Med. (June 4 and 11, 1953).

THE PROGNOSIS IN GASTRIC ULCER TREATED CONSERVATIVELY. Banks and Zetzel, Ibid, June 11, 1953.

Peptic ulcer is still a subject of prime importance to general practitioners, internists, as well as to surgeons. Two recent comprehensive books have appeared on the subject (Ivy, Grossman and Bachrack's and Sandweiss's) and Zetzel reviews some ninety or more articles on the subject. According to Wangensteen, there is an annual mortality of 10,000 from peptic ulcer, which afflicts from 5 to 10 per cent of the adult male population in the United States and England. Peptic ulcer is a chronic disease involving the upper gastrointestinal tract (esophagus, stomach and duodenum) in areas exposed to an acid gastric juice. "No acid, no ulcer" is still a valid truism, and the keystone of the current medical practice regarding peptic ulcer. In spite of reports of peptic ulcer with achlorhydria, "the overwhelming weight of evidence establishes the presence of free HCl as the *sine qua non* of ulcer activity. Under drug therapy, this reviewer states: "The ideal drug in ulcer therapy should have the following characteristics; a prolonged neutralizing effect without a secondary or rebound increase in secretion; palatability; capacity to promote healing and prevent or delay the onset of recurrences and complications; effectiveness when taken by mouth; promptness in relief of symptoms; and noninterference with the process of absorption."

He then reviews a number of drugs and medicinal preparations,—such as calcium carbonate, magnesium preparations, aluminum preparations, SCMC, mucin, protein hydrolysates, anion-exchange resins. The antocholinergic drugs reviewed include atropine, banthine, hexamethonium, TEAC, dibuline, prantal and antrenyl, enterogastrone, urogastrone, kutrol, eugenol, antihistamines, chlorophyll, tropine, and ACTH. He reviews the articles on emotions and ulcer, x-ray therapy, hemorrhage, perforation, obstruction and intractability, and a final section on gastric ulcer because of the question of malignant degeneration enters into it.

In the article by this reviewer and Banks (v. supra), they conclude that the prognosis of gastric ulcer under medical treatment is not reassuring, because of the failure to observe rigid clinical and laboratory safeguards. They think the risk of malignant degeneration compares favorably with the operative mortality of resection. "There is need for a wider publicity of the known facts concerning gastric ulcer among the profession and the public."

(NOTE:—This review and this article are well worth the time and trouble of any practitioner who has to deal with the problem of peptic ulcer.)—W.W.W.

Woman's AUXILIARY

TODAY'S HEALTH

EACH of the past three years has seen our state increase the number of subscriptions to Today's Health. We placed fourth in the National Contest in 1952-53. This was accomplished not by a few, but by all of the County Auxiliaries. We are now on our way to an even greater increase for 1953-54. However, this increase can only be accomplished if each county auxiliary member feels the responsibility for positive health education and good public relations through subscriptions to Today's Health. Here are a few ideas which may help you do a 100 per cent job.

1. Subscriptions to Doctors: this should be 100 per cent in each county. Definitely an outlet of positive Health education.

2. Subscriptions to Dentists: The same as above. The main idea in both of these is to work. Subscriptions are not obtained from either of these groups or from the lay-public without a hard working committee on Today's Health.

3. Subscriptions to schools: This may be done by contacting the school superintendent or the school nurses or those teachers who are directly responsible for teaching health, also a gift subscription to the P.T.A. President or Health Chairman.

4. Subscriptions through increasing size of sales force, such as visiting local women's clubs, P.T.A. groups, etc. Tell them about Today's Health. Give free copies which may be had by writing the National Office. If your county has a Yearly Fair, plan to give out free copies. By this you are able to aquaint many with Today's Health, who otherwise would not know what our magazine offers in fine accurate information.

5. Subscriptions for Congressmen and State Legislators. Ask your Medical association legislative chairman to give their representatives a gift subscription. They need to know more about the public health of our State and will pay more attention if given by the Medical Society.

Our main objective is to place positive Health education in the hands of the public through Today's Health.

Mrs. James C. Soderstrom
Chairman Today's Health
Whipple, Arizona

NEWS ITEM

Joseph F. Milan, M.D., Maricopa County Hospital, Phoenix was taken in as a Junior Member of the Maricopa County Medical Society at their Meeting of January 4, 1954.

NOTICE

ALL CONTRIBUTORS OF ARIZONA MEDICINE SHOULD HAVE THEIR MATERIAL IN THE JOURNAL OFFICE NOT LATER THAN THE 10th OF THE MONTH PRIOR TO PUBLICATION IN ORDER TO HAVE ARIZONA MEDICINE REACH ITS READERS ON OR BEFORE THE 10th OF THE MONTH

Material arriving after that date will be published the following month.

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PEDIATRIC CLINICS OF NORTH AMERICA

THE odds may be as high as 150 to one against a child contracting polio during the first 20 years of his life, it was estimated in the introductory issue of a new medical publication now being distributed to the nation's physicians.

The publication, entitled *Pediatric Clinics of North America* and containing nine definitive articles on polio, was prepared with the editorial assistance of the National Foundation for Infantile Paralysis. It is published by W. B. Saunders Company of Philadelphia, medical book publishers.

Designed to provide the latest information on the diagnosis and management of polio, the introductory issue is being distributed free of charge by the W. B. Saunders Company to 110,000 practicing physicians in the United States.

The first regular issue is due in February, 1954 and every three months thereafter. The publications will present symposia on methods of management currently in use for the handling of various pediatric problems.

Contained in the symposium are articles by: Dr. David Bodian, Johns Hopkins School of Hygiene and Public Health; Dr. Alex J. Steigman, University of Louisville; Dr. James L. Wilson, University of Michigan School of Medicine; Dr. Jessie Wright, University of Pittsburgh; Dr. William T. Green, Harvard Medical School; Dr. Howard A. Rusk, New York University College of Medicine, and Dr. Jonas Salk, University of Pittsburgh.

VA To Ask Financial Information In Non-Service Connected Cases

UNDER a new policy, Veterans Administration from now on will ask additional information from a veteran applying for hospitalization of a non-service connected condition. Previously, the veteran had only to answer the question: "Are you financially able to pay the necessary expense of hospitalization or domiciliary care?" If the answer was "no," the veteran was eligible. Now the veteran will be required to answer the following additional questions:

1. What is the current value of your property, real and personal? 2. What is the current amount of your ready assets in the form of cash, bank deposits, savings bonds, etc.? 3. If you own real property, what is the approximate amount of the unpaid mortgage or other indebtedness? 4. What are your average monthly expenditures, including mortgage payments and all other personal expenses, including your expenses for dependents? 5. What was your average monthly income for the last six months, from all sources?

However, VA states that, "This addendum may be used in no way whatever to deny hospitalization to a veteran, as the law specifically provides that 'the statement under oath of the applicant . . . shall be accepted as sufficient evidence of inability to defray necessary expenses.' (It) is designed to protect applicants for hospitalization, and veterans generally, from charges of 'chiseling' on the government."

The reader is referred to Circular No. 11 *of November* 4, 1953 *of the Veterans Administration and Form* 10-P-10a *for more complete and interesting information.—ED.*

MEDICAL LITERATURE NEEDED

ST. GEORGE'S MISSION HOSPITAL
Travancore, S. India

Gentlemen,

I wish to inform you that the above Hospital is a non-profit organization situated in a hilly village and working among the poor labour classes of the locality and its suburbs. As good medical literatures are very few in this part of the world, a small library is started recently, attached to the above Hospital with the idea of collecting used medical journals, books, bulletins, Transactions of Medical Societies etc., from all available sources in foreign countries so that up-to-date knowledge in medical practice may be obtained.

Further Ayurvedic and Unani systems of Medicine are very troublesome competitors to Allopathic system here and proper equipments and medical literatures are highly essential for the successful management of the Hospital.

In the light of the above circumstances, I request you to kindly issue a News Note in your monthly Bulletin and also in your Association Medical Journal requesting the sympathetic members of your Association to send me their used medical journals with all available backward copies, Medical books, reprints of articles and other useful Medical literatures along with secondhand surgical instruments, Medical appliances, Laboratory equipments etc. and gift parcels containing antibiotics, liver extracts and other patent medicines so that many of our poor patients may directly and indirectly be

benefitted by them.

This act of kindness and charity by the members of your association will ever be remembered and lapse of time cannot wipe away from our memory.

Thanking you very much for all your valuable services,

Yours Very Truly,
DR. T. K. THOMAS
Hon. Medical Superintendent
ST. GEORGE'S MISSION HOSPITAL
Punalur, P. O., Travancore, S. India

True copy of the requisition for X-Ray Literatures published in the American X-Ray Technician dated March, '53.

BOOKS FOR INDIA

A letter has been received from a Doctor in a Mission Hospital in India, requesting good radiological books, Journals et cetera. The doctor states that very few books are available at the hospital. The few books that are for sale are very expensive and the hospital is unable to pay for them. This institution is a charitable one and theirs funds are very limited.

The X-Ray Technician will be sent to the hospital regularly with compliments of the ASXT.

Members of the ASXT are requested to send books on radiography and medicine, that are still up to date, but are not being used. Old copies of medical journals will be acceptable.

Address all material to Dr. T. K. Thomas, Medical Superintendent, St. George's Mission Hospital, Punalur P.O., Travancore, S. India.

Copy of the News Note published in the Journal of the Christian Medical Society of U.S.A. dated November — December, 1952.

SPECIALIST NEEDS LITERATURE

I am interested in Radiology, Dentistry and in diseases of Eye, Ear, Nose & Throat. If some of the members care to send me some literature concerning the above specialties, it will be a source of great help in my profession. I am trained in the above specialties in the American Presbyterian Hospital, Miraj, India, and I wish to inform you that I am the only specialist in the above subjects in this locality for nearly two lakhs of population. This locality is very famous for its Bolshevik activities, and I have a lot of work to do other than professional. Recently we have formed a new Association to start work against Bolshevik activities. A few months back I received a few copies of the J. A. M. A. from a member of the C. M. S., Dr. William Johns and indeed it was a great help to me. I am extremely thankful to you for all your help and I earnestly pray for the society as well as for all its members.

DR. T. K. THOMAS,
St. George's Mission Hospital,
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HOW DO YOU PRACTICE MEDICINE?

MALPRACTICE suits are usually the results of the failure of a physician to perform his duty properly. The establishment of a suit depends upon the proof, (1) that the physician failed to do his duty, and (2) that as a result, injury to the patient resulted.

A physician has an implied contract with his patient to render services. This implies that the physician has reasonable skill and will apply this skill in the treatment of the patient. From a legal standpoint the physician implies in his acceptance of the patient's care, that he possesses and will exercise that reasonable and ordinary degree of skill and learning which has been established by his fellow practitioners in the same or like communities.

Physicians may:

(1) Apply bad, wrong, or injudicious care from
 (a) Ignorance
 (b) Carelessness
 (c) Want of proper professional skill
 (d) Disregard of established rules or principles
 (e) Neglect

Any one of which may cause in the patient
 (a) Injury
 (b) Unnecessary suffering
 (c) Death

Most malpractice suits would fit into the above diagram. To illustrate some of the various ramifications covered in the physician's legal duties, the following are taken from Regan's book, "The Doctor and the Patient and the Law".

(1) The physician must not neglect or abandon his patient.

(2) He must give his patient sufficient attention.

(3) He must not experiment.

(4) He must proceed diligently without unnecessary delay.

(5) He must follow good practice, common practice in diagnosis, and treatment.

(6) He must find or anticipate any condition reasonably determinable or reasonably likely to develop.

(7) He must utilize diagnostic aids.

(8) He must obtain legal consent to operate and for autopsy.

(9) He must give proper instructions for the care of the patient and for the protection of those coming in contact with the patient.

(10) He must fulfill the terms of a special contract if he makes one.

Your patient is important — to himself and to you. (Utah Medical Bulletin)

MEMBERSHIP REPORT

Membership of the State Association on January 1, 1954 totalled 723, representing a net gain of 42 since January 1, 1953. During the past year 72 physicians were admitted as new members; 2 were reinstated; 15 moved from the state; 7 were dropped; 3 resigned; 7 were deceased.

Included in the 723 membership total are 675 Active members and 48 Associate members.

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ARIZONA MEDICINE

Journal of ARIZONA MEDICAL ASSOCIATION

VOL. 11, NO. 3 MARCH, 1954

TABLE OF CONTENTS

OFFICERS

ARIZONA MEDICAL DIRECTORY 6A
WOMAN'S AUXILIARY DIRECTORY 6A

ORIGINAL ARTICLES

CANCER OF THE COLON 83
Lewis W. Guiss, M.D., Los Angeles, California
THE TREATMENT OF MALIGNANT TUMORS IN THE FIRST TWO DECADES OF LIFE 86
Marcy L. Sussman, M.D., Phoenix, Arizona
TRACHEOTOMY IN BULBAR POLIOMYELITIS 89
A. Harry Neffson, M.D., Tucson. Arizona

MEDICAL PROBLEMS

PHOENIX CLINICAL CLUB 95
Drs. C. B. Warrenburg and B. P. Frissell, Phoenix, Arizona

PRESIDENT'S PAGE

THE BRICKER AMENDMENT 104

EDITORIAL

MEDICAL EDUCATION–QUO VADIS 105

INTERESTING TOPICS

SOME OF THE GOOD ARTICLES IN CURRENT MEDICAL JOURNALS 106
W. W. Watkins, M.D., Phoenix, Arizona
OBESITY 106
W. W. Watkins. M.D., Phoenix. Arizona

TOPICS OF CURRENT MEDICAL INTEREST

RX., DX., AND DRS. 108
Guillermo Osler, M.D.
"PHARMACY'S PLACE" 112
Arizona Pharmaceutical Association
THE PROFESSIONAL BOARD "CANCER" 114
Edward H. Bregman, M.D., Phoenix, Arizona
ORGANIZATION PAGE 116
Norman A. Ross, M.D., Phoenix, Arizona
RED CROSS GETS SALARIED PRESIDENT 117
IN MEMORIAL–Isaac L. Garrison· George B. Irvine; A. G. Rice 118
CANCER SEMINAR OUTSTANDING 119
Edward H. Bregman, M.D., Phoenix, Arizona
SOCIETY OF MEDICAL TECHNOLOGISTS CONVENTION 119
GOOD SAMARITAN HOSPITAL 120
VACCINIA IMMUNE GAMMA GLOBULIN AVAILABLE 121
MEDICAL ASPECTS OF HOUSEWORK 122
W. W. Watkins, M.D., Phoenix, Arizona
SANATORIUM BOUGHT BY DR. O. L. BENDHEIM 122
WHIRLPOOL DONATED TO MEMORIAL HOSPITAL POLIO WING 123
AMERICAN GERIATRICS SOCIETY 126
HILL-BURTON CONSTRUCTION 27A

WOMAN'S AUXILIARY

ANNUAL MEDICAL CONVENTION HELD AT SAN MARCOS HOTEL, CHANDLER, ARIZONA 124
Mrs. Rowena A. Enfield, President Woman's Auxiliary
PROGRAM WOMAN'S AUXILIARY ANNUAL MEDICAL CONVENTION 125
MARICOPA MENTAL HEALTH ASSOCIATION 125
Mrs. John A. Eisenbeiss, Phoenix, Arizona
A NEW COMMITTEE – MENTAL HEALTH 125
Mrs. D. L. Secrist, Tucson, Arizona

DIRECTORY

LABORATORIES 27A
SANATORIUM DIRECTORY 29A
DRUGGISTS DIRECTORY 33A
PHYSICIANS DIRECTORY 35A

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Original ARTICLES

CANCER OF THE COLON

Lewis W. Guiss, M.D.*
Los Angeles

THE SUBJECT of cancer of the colon is a very important one from several view points. First, it is important because of the relatively high incidence of cancer of this organ both absolutely and also in relation to incidence of cancer in other organs. Cancer of the large bowel is responsible for approximately 40,000 deaths a year in the United States and probably at any given time there are from 3 to 4 times that number of people, who have as yet undiscovered cancer of the colon, who are being treated for it, or who have been treated and are either cured or will eventually develop recurrence and die of their disease. Cancer arising in this organ probably comprises about one-fifth of the total incidence of cancer in man.

This admittedly high incidence in itself, however, would not justify the time to be alloted to it this afternoon, were it not for the fact that cancer of the colon is also one of the most curable, if the disease is dealt with in any degree of promptness. Actually it has been stated that the possibility for a permanent cure is greater for cancer of the large bowel, than for cancer anywhere else within the body. In any of the larger clinics the resectability rate is somewhere between 80 and 90 per cent and the operative mortality is in the neighborhood of 5 per cent or less. In patients where a resection is possible over 50 per cent of the patients will prove to be 5-year cures, without regard to the presence or absence of nodal metastases. When nodes are found to be free of metastases the cure rate approaches or exceeds 70 per cent at the end of 5 years. Great strides have been made in recent years in perfection of surgical technique, anesthesia, and in care of the patient, both pre- and post-operatively. This has resulted in an ever diminishing operative mortality, less morbidity, and shorter hospitaliation. Yet during this same period of time there has been no apparent shortening of the time interval between the onset of symptoms and the time of treatment — the period continues to average somewhere around 8 months. Here in this organ, with an excellent chance for a cure, this curability is directly related to early diagnosis and treatment while the lesion is yet limited to the colon. The opportunity for early diagnosis belongs almost entirely to the general practitioner and to the internist who first see the patient.

What then are the pathognomonic symptoms which indicate the presence of cancer of the colon? It is regretable that there are none. Every patient who presents himself with any sign or symptom pointing to the possibility of a colonic lesion must be regarded as having cancer of the colon until it is proved that he or she has not. Certainly the most common causes of bleeding, changes in bowel habit and so on, are not cancer of the colon, but the burden of this proof belongs to the physician and every such patient must be regarded as having cancer of the colon until this possibility is excluded. Unless this attitude is adopted, a patient with cancer of the colon will be cheated

*From the Department of Surgery, School of Medicine, University of Southern California. Presented at the Cancer Seminar of the American Cancer Society, Arizona Division in association with the Arizona Medcal Assocation, Phoenix, Arizona, January 19, 1953.

of his excellent opportunity for cure for this condition. In a recent investigation (1) into a large group of patients coming to definitive treatment for cancer of the colon, it was depressing to find that one-fourth of them had had erroneous treatment for some other condition and that of 444 patients who had carcinoma of the rectum which could have been felt by rectal examination had it been done, that 102 of them had received treatment completely misdirected; 54 had surgery for hemorrhoids or other anal pathology and most of the remaining either had injection treatments for hemorrhoids or similarly useless therapy. It is difficult indeed, to understand how the true nature of the disease could have been missed during this miscarriage of treatment.

When considering the symptoms which might direct attention to the bowel, one should remember that the colon is about 5 feet in length and that from cecum to sigmoid the diameter gradually diminishes and becomes narrowest at the junction of the sigmoid colon and rectum. The primary function of the right colon is absorptive. The lumen of the bowel here, has its greatest diameter and the contents are liquid. Symptoms here therefore, are primarily the result of physiologic disturbances and obstructive symptoms are uncommon. Small lesions in this area are undoubtedly totally asymptomatic. By the time they are discovered they are usually quite large, cellular and ulcerated. The most common symptoms are those of unexplained severe secondary anemia, fatigue and occasionally weight loss. There is also frequently vague abdominal distress from some ill-defined source and not infrequently the patient himself has discovered a palpable mass. Progressing toward the rectum along the colon, the lumen becomes progressively narrower and the contents of the bowel less fluid. Smaller lesions therefore could be expected to cause earlier symptoms. For this reason patients with lesions of the left colon, usually exhibit the appearance of well preserved health. Symptoms here are most commonly changes in bowel habit and bleeding. Frequently there is an increase in constipation alternating with diarrhea with minor abdominal cramps and variable distention. As the rectum is approached there will be increased frequency of bleeding, more pronounced disturbance of bowel habit; it is not until the lesion impinges upon the anal canal that pain becomes an important symptom.

How then should these patients be dealt with who possess themselves of any of these varying symptoms suggestive of cancer of the colon and also the asymptomatic patient who presents himself because of fear of cancer, or for routine periodic examination, with cancer of the colon in mind because of familial history? Of first importance is a careful and, it should be emphasied, sympathetic history including leading questions to uncover vague symptoms which the patient may frequently discount as being of no importance. It is needless to state that this should be followed by a thorough physical examination and a careful rectal examination. Palpable masses will rarely be felt on abdominal examination, especially in early lesions, but a diligent rectal examination may be expected to reveal the presence of over half of the lesions arising in the colon. Proctoscopic and/or sigmoidoscopic examination should be done routinely for several reasons, not only for direct visualiation of tumors in the rectum and lower sigmoid if present, but for inspection of non-malignant sources of bleeding such as polyps, and frequently to verify the fact that blood is actually coming from higher up the colon. Because of this latter point, many proctologists prefer to do their endoscopic work without prior preparation, such as enemas or castor oil. In general preliminary preparation makes the procedure much easier both for the patient and the physician, and there is less likelihood of missing small lesions. One can usually still see if there is blood coming from higher up, even after careful preparation. Biopsies should be taken at this time of all lesions no matter how obvious their nature. It should be stressed that 75 per cent of all colonic lesions occur in the rectum and sigmoid colon where they are readily discoverable by this simple maneuver.

The diagnosis of lesions beyond the reach of the sigmoidoscope depends almost entirely upon x-ray examination by barium enema, a subject which will be discussed in some detail by Dr. Garland. However, it should be stressed that it is the responsibility of every physician to do a rectal and endoscopic examination before the patient is sent to the radiologist for a barium enema, the most important reason being, that frequently small lesions in this area cannot be visualized even by the most skillful radiographic examination. No physician can "pass-the-buck" for the responsibility of establishing a diagnosis in such a case to the radiologist by ordering a

barium enema. The responsibility for finding cancer in the rectum and recto-sigmoid where 75 per cent of the lesions in the colon occur rests squarely upon the shoulders of the patient's own physician and pathology here should be ruled out before referral to the radiologist is made. A complete blood count is done to ascertain the degree and type of anemia if present, and some advise a routine stool for occult blood. There are those who advocate various Papanicolaou techniques for assistance in diagnosis of these colonic lesions. They might very well be reserved for suspicious cases in which careful examination fails to reveal the cause for symptoms and thus encourage the physician to continue his investigation. There seems to be little indication for the routine use of cytological methods in such cases.

Now what are some of the diagnostic pitfalls in establishing a diagnosis for cancer of the colon? First of course, and most common, is the discovery of hemorrhoids or some other cause for bleeding or symptoms in the anal canal. Too often the examining physician and patient are satisfied by such discovery and are content at least for a while to treat this pathology. It will be recalled that one-fourth of patients with palpable tumors are still so mismanaged. Even with discovery of such pathology low in the gastro-intestinal tract, the examining physician is still obligated to rule out higher pathology and every such patient is entitled to proctoscopy and sigmoidoscopy, and if these are negative should have a barium enema before having treatment of hemorrhoids. Occasionally, the discovery of an ulcerative colitis apparently accounts for the patient's symptoms, but it should not be forgotten that patients with ulcerative colitis are 100 times more prone than the average person to develop cancer of the colon(2). More common is the roentgenographic discovery of diverticulosis with diverticulitis which may falsely give a sense of security. It must not be forgotten that this condition is quite common and that its presence is no insurance against a superimposition of a colonic cancer. Lastly, there is the patient who after a careful and complete work-up fails to have any demonstrable pathology, yet returns complaining of continuing symptoms. One should not have the slightest hesitation in asking the patient to resubmit to the entire diagnostic procedure. It should be remembered that no examination is infallible and that small lesions can easily be missed. Complete re-examination is the only insurance available at present to prevent missing these small, early, yet symptomatic lesions.

In regard to treatment of cancer of the colon there is but one treatment at the present time and that is prompt and adequate resection of the primary lesion together with the regional lymph nodes. There is not the time this afternoon nor is this the place to go into technical discussions of various types of surgery. Suffice to say that the patient should be carefully prepared pre-operatively, blood, vitamin and protein-deficiencies be corrected and that proper attention be given to any co-existing disease. This together with the newer refinements in chemo—and anti-biotic therapy and details of post-operative care have reduced the operative mortality to an almost negligible level. Understanding the favorable nature of cancer of the colon and the relatively high cure rate as compared to cancer of other organs, surgeons have been willing to increase the scope of the operation done. Further, recognizing the high degree of pallaition afforded patients with low incurable lesions with marked extension of comfortable normal life, the surgeon is no longer faced with the decision as whether or not to resect. The humane attitude now is to resect every lesion when it is technically possible, whether it be for cure or palliation. The death from liver or other distant metastases in the resected patient is relatively painless and many months and even years of useful and happy life may be salvaged. In contrast the death from large bowel obstruction, perforation and other events incident to the unresected lesion are not only painful and unpleasant but frequently prove to be psychologically disturbing to the entire family. The present high cure rate of over 50 per cent could be measurably increased if patients were resected before nodal metastases took place and the lesions were still limited to the colon. This can only be achieved by extending the program of lay education on the on hand, and more careful evaluation of symptoms of patients and establishment of earlier diagnoses on the part of the physician.

REFERENCES

1. Jackman, R. J., Neibling, H.A. and Waugh, J. M.: Carcinoma of the Large Intestine, JAMA. 134:1287 August 16. 1947.
2. Lynn, D. H.: The Relationship of Chronic Lesions to Carcinoma of the Colon – Chronic Ulcerative Colitis, Internat. Abstr. Surg. in Surg. Gynec. and Obst. 81:269, Octoher, 1945.

THE THEATMENT OF MALIGNANT TUMORS IN THE FIRST TWO DECADES OF LIFE*

Marcy L. Sussman, M.D.
Phoenix, Arizona

IN THE following discussion we shall be concerned with the curative treatment of malignant tumors in young people, not with palliation. By curative treatment is meant the selective destruction of the tumor both in its known locations and where, by statistical inference, it may have extended. Whether the result is achieved by surgical excision or by radiation therapy is not material to the present discussion. The choice is ordinarily a matter of expediency.

These general principles present special problems when they are applied in the individual whose growth is not yet complete. It is likely, for example, that the required therapy will produce serious irreversible damage to one or more growing tissues in a patient who, if cured, has a long life expectancy. Furthermore, tumors in the young differ from those in adults since only about two out of five are carcinoma, while about three out of five are embryonic growths. In some of the latter, the cytology is deceptive in that the intermixing of "tumor in a slow growth phase" with normal tissue may simulate invasiveness while apparent encapsulation may result from a rapidly growing tumor completely replacing normal cells. (1) We are presented, therefore, with the paradox of a tumor requiring therapy for cure, in a patient whose long life, if treatment is successful, may be greatly complicated by physiologic and/or psychologic deformity resulting from treatment.

The following cases, which have been under my observation during the past two years, are presented briefly to illustrate not results, since the follow-up in some is much too short, but therapeutic principles.

CASE NO. 1. NODAL LYMPHOSARCOMA. P. N., a beautiful white girl of six years, was seen in May, 1950 by Dr. James Emert, Phoenix, because of a mass in the left groin which had been present for six weeks. Her mother brought her promptly for treatment because the father had died recently of teratoma. Dr. Emert performed an inguinal node dissection. The pathological report on the tissue was lymphosarcoma. At that time, no other adenopathy could be demonstrated and the spleen was not enlarged.

Following surgery, she was investigated at the University of Pennsylvania Hospital from whence, in September, 1950, she was referred to me. By this time, a node about 1 cm. in size was palpable above the left supraclavicular fossa, and small nodes could be felt on the right side of the neck. Obviously, this was no longer a situation calling for radical therapy but, at the mother's insistence, the left cervical node was removed by Dr. Emert. The pathological appearance was the same as had been found in the groin.

The further course was rapidly down-hill, with progressive involvement of additional lymph node areas, recurrence in the left groin and splenomegaly. While these responded to local palliative redation therapy, there was general deterioration with a terminal blood picture suggesting aleucemic lymphadenosis. Exitus occurred in December, 1950.

COMMENT: Although lymposarcoma is usually seen first as a generalied disease, an increasing number of cases have been reported in which the process seems limited to a single focus. The commonest site of localized disease is said to be around Waldeyer's ring, with the gastro-intestinal tract the second commonest. The writer has personally seen three cases of lymphosarcoma of the stomach remain apparently well for many years after subtotal gastrectomy. It is useless to say that these are not examples of lymphosarcoma since we have no way, a priori, of making the differentiation. Unicentral nodal disease is rare, but another personal experience involved a twenty year survival after removal of involved cervical nodes. Obviously in the present patient, surgical removal of the apparently limitcd disease was the proper procedure. There was little to lose and a remote chance of cure.

The possibility of post-operative radiotherapy to the area of excision might have been entertained, but there could be little doubt that it was not indicated. If tumor remained, surely the disease was multicentric and radical therapy

*Being part of a presentation made to the El Paso County Medical Society, Texas, in June, 1952.

was contraindicated. If there was no residual tumor, there was no justification for damaging the underlying femoral epiphysis. The precise lethal dose of radiation for lymphosarcoma is unknown, but it is probably at least of the order of 4000 given in three weeks. This dose would entail a serious morbidity for nomal tissue.

CASE NO. 2. TRANSITIONAL CARCINOMA OF NASOPHARYNX. J. B., a white female of nineteen years, complained in February, 1950, of a draining right ear for six months and a swelling in front of this ear for two months. Headaches also had become prominent.

Examination under general anesthesia by Dr. W. J. Wick, Phoenix, revealed a large fungating friable mass originating in the right nasopharynx and extending across the midline to the left side. Biopsy revealed an anaplastic transitional cell carcinoma. Cervical nodes were enlarged on both sides.

COMMENT: There could be no question of surgical excision in this case. Indeed, the disease was so extensive that ordinarily only palliative radio-therapy would be undertaken. However, transitional cell carcinoma is often a highly radio-sensitive tumor and, in fact, in this patient the tumor was markedly reduced in size after the adminitration of approximately 1000 r. into the bulk of the tumor. It appeared clear there would be nothing to lose if therapy were carried to the limit of tolerance of the contiguous normal tissue, since there were no close vital structures, and the patient, at the age of nineteen years, had practically completed growth. Accordingly, she was treated vigorously on both sides of the neck and face as well as through an intra-oral field. It is estimated that the minimum dose in any part of the tumor was 3500 r. This treatment involved a mild blistering of the skin and epithelitis. The tumor disappeared.

The patient lived until late 1951. During the period of almost two years, there was no local recurrence. Solitary skin metastases occurred in the scalp eight and sixteen months after treatment. Metastases appeared in the lumbosacral spine at the latter period.

Radio-sensitivity is not synonymous with radio-curability. On the basis of the evidence, the conclusion that 3500 r. was a lethal dose for this tumor, would hardly be justified. Nevertheless, it seems within the bounds of possibility and affords the hope that a less extensive lesion might be controlled. Even in a younger patient, therefore, vigorous radio-therapy to a transitional cell carcinoma which appears limited to regional nodes, is indicated.

CASE NO. 3. HEMANGIOPERICYTOMA OF THE LUMBAR SPINE. S. F. This white female, who is now twenty-one years old, was first seen in August, 1952, with the following history. She was explored two years before, at the age of nineteen, for a left retroperitoncal mass which was thought to be a calcified sarcorma, and was considered inoperable. However, in March, 1951, she was re-operated by Dr. John L. Pool of New York City, who removed a large tumor which proved to be a hemangiopericytoma at the level of the first and second lumbar verterbrae. The tumor was adherent to the transverse processes and vertebral bodies. The third lumbar transverse process had to be removed. She was given 4000 r. post-operatively. In February, 1952, she was re-explored because of a palpable mass which proved to be scar tissue. When I saw her in August, 1952, she was in good health. A left abdominal mass was palpable which could not be separated from the spine. Intravenous urography showed that the left ureter was displaced sharply laterally by the tumor mass and its position, therefore, provided an objective guide to the size of the mass. As far as could be judged, it was the same size as it had been and presumably was the scar tissue found by Dr. Pool. That patient has remained clinically well.

COMMENT: Hemangiopericytoma is classified by some as a benign vascular tumor, but local invasion and even metastases have been reported. (2) Apparent encapsulation may be deceiving, since anastomosing vascular channels are characteristic of the tumor. In the present case, there can be no question that the treatment of choice, namely surgical removal, was carried out. The need of post-operative radiotherapy, however, might be debated. Removal of the tumor obviously was a difficult task — it was regarded as inoperable on one exploration — and one might question whether complete removal was achieved. Furthermore, if radiation is decided upon, dosage is a difficult decision, since the histologic appearance is of little value in determining response to treatment. Many tumors of presumed blood vessel origin are retarded by relatively small doses, and if the present tumor is benign, retardation is all that is needed. On the other hand, some

tumors are quite resistant, and if malignant cells, or cells of rapid growth potential were left behind, cancericidal doses would probably be needed for their control. Depending on which attitude is adopted, one would be courageous — or negligent — not to advise post-operative therapy. Although the present tumor, if any remained, may have been retarded by 2000 r., I find myself in agreement with the therapist who elected to give 4000 r. The patient had practically passed her period of growth and tissue morbidity was relatively small. If the tumor were malignant, it is unlikely that a smaller dose would be effective. The major objection to the larger dose is over-treatment of a benign lesion, which, in my opinion, is the lesser of available evils. In any event, it is wiser to make a choice and proceed on a planned treatment than to adapt therapy to "the course of the disease."

CASE NO. 4. NEUROBLASTOMA. T. H. This white male, age six months, presented a left paravertebral tumor extending from the ninth dorsal down to about the second lumbar vertebrae. There was pressure atrophy of the ninth and tenth ribs. The left kidney was displaced caudad.

The patient was operated on February 27, 1953, and the tumor removed by Dr. D. State, then of Phoenix. The pathological report was neuroblastoma. The patient was given 3000 r. post-operatively.

COMMENT: The problem here was similar to that in Case No. 3 — a tumor which may have been removed completely, but, on the other hand, may not. There are two additional factors. First, the growing spine is in the treatment area. In one reported case, extreme retardation of ephyseal growth followed the administration of 1200 r., to each side of the leg during five months. (3) Irradiation has been used to produce scoliosis in animals and to interfere with epiphyseal development on the convex side of a functional scoliosis in humans. (4) In general, it appears that infants tolerate smaller doses than older children.

In the second place, neuroblastoma is a serious malignancy which is usually fatal. No measure may be omitted which might result in sterilization of any remaining tumor. Obviously, then, it is most important to confirm the pathologic interpretation. Any reader of "Cancer Seminar" is impressed with the fact that, on a given preparation, competent pathologists will differ in their interpretation. To cite an example at random, in the Seminar on Bone Tumors, (5) in Case No. 4 fifty-four pathologists thought the tissue was osteogenic sarcoma, thirty-six thought the lesion was benign, and six made a diagnosis of chrondrosarcoma.

My compromise solution in the present case was to give 3000 r. through one portal during three weeks. The parents were made fully aware of the morbidity and implications. In this type of complicated problem there would probably be as many solutions as there are centers of oncology.

CASE NO. 55. CANCER OF THYROID. P. P. I first saw this delightful girl of nine years, in April, 1952, a patient of Dr. F. Holmes. She had been studied in Oakland, California in January, 1951, where a total thyroidectomy and block dissection of the neck was done for carcinoma. Lymph nodes on both sides of the neck were found to be involved. There had been consideration of the use of roentgen therapy, but surgery was chosen. The use of radioactive I 131 was considered to be more academic than practical, as is so often the case.

In April, 1952, she was re-examined in Oakland and found to have a nodule under the right ear. Clinically, confirmed by tracer studies, this was thought to be metastatic. The choice of surgery versus radiation had to be made. Because of the extensive original disease, radiation was elected. The nodule was given 3000 r. This would not be considered a cancericidal dose, which would probably be of the order of 5500-6000 r. The patient's mother felt that the tissue reaction would not be tolerated, and I was inclined to agree. With 3000 r., the mass diminished to about one-third of its size and no new masses appeared. After considerable consultation, Dr. T. W. Woodman of Phoenix re-operated. There has been no recurrence to date, and the child seems to be in good health.

COMMENT: This case has many interesting facets but particularly, I think, illustrates the principle that the biologic potential of a tumor cannot always be judged from its histologic appearance. There was little in the original lesion to suggest that rapid deterioration would not follow, except that the pathologist commented that the nodes did not look as mal-

ignant as did the thyroid tumor. Recurrence after one year was not unexpected, therefore, and yet at the same time, it suggested that the tumor was slow-growing. Therefore, the recurrence deserved adequate therapy, but of what type? I think the compromise accepted here was a good one. The radiotherapy used, I believe, partially sterilized the tumor and certainly reduced its size. In my opinion, a dose of 3000 r., when it can be administered to a limited area, does not increase operative morbidity. If the tumor responds and the lesion becomes operable, so much the better. If not, the dose is sufficient to be regarded as good palliative therapy.

SUMMARY: Six patients less than twenty years of age who suffered from malignant tumors, are presented and discussed from the point of view of therapy. The theme is that where there is any chance of success, therapy should be planned to cure. Whether surgery or radiation or both are used, is a matter of expediency. The complications peculiar to treatment in childhood are discussed and the morbidity evaluated.

REFERENCES

1. Bodian, M., The Pathology of Intracranial Tumors in Children. Jour. Faculty Rad., 4. 171. 1953.
2. Anderson, W.A.D., Synopsis of Pathology C V. Mosby Co, St. Louis, 1948.
3. Frantz, C. H. Extreme Retardation of Epiphyseal Growth from Roentgen Irridation. Radiology, 55, 720, 1950.
4. Arkin, Alvin M. Personal Communication.
5. Cancer Seminar. Vol. 1, Page 38, Sept. 1951.

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TRACHEOTOMY IN BULBAR POLIOMYELITIS

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DEATH in acute anterior poliomyelitis results solely from bulbar and bulbo-spinal involvement. Among other effects, involvement of this region causes respiratory embarassment and failure, due to pararlysis of the muscles concerned in swallowing, breathing, and coughing. Inability to swallow results in pooling of salivary secretions which can block the larynx and be aspirated; loss of the ability to cough can lead to atelectasis and "drowning in one's own secretions."

These contingencies were dealt with by postural drainage, as suggested by Durand in 1929, continuous mechanical aspiration of pharyngeal secretions, parenteral instead of oral or gavage feeding, administration of oxygen by catheter or mask, occasional bronchoscopic aspiration when indicated, and, when there was sufficient paralysis of the diaphragm and the intercostal muscles to warrant it, the use of the respirator. When death occurred in spite of these measures, it was usually ascribed to progressive involvement of the respiratory and circulatory centers of the brain stem. To this eventuality the physician had become reconciled, since he felt powerless to prevent or control the spread of this infection.

The use of tracheotomy in the treatment of bulbar poliomyelitis was first reported by Wilson from Boston, in 1932. Other reports describing and advising the occasional emergency use of tracheotomy in selected cases of acute bulbar poliomyelitis appeared sporadically during the next 15 years.

In 1946, compelled to cope with a severe epidemic of poliomyelitis, including 400 bulbar cases, the Minneapolis group performed 75 tracheotomies. The reports of their experiences in these cases and their advocacy of early operation gave great impetus to the use of tracheotomy in bulbar poliomyelitis. This was reflected in a succession of articles describing an increasing use of tracheotomy, not only as a life-saving measure in respiratory emergencies, but also as a prophylactic procedure to prevent hypoxia, hypercapnea, atelectasis and pneumonia, and pulmonary edema. This advocacy of the use of tracheotomy based on greatly liberalized indications, including so-called "prophylactic" tracheotomies, has met with strong disapproval from a number of workers. Curiously, this seems to have developed into a sort of sectional issue (except for occasional dissenters within both regions). In the Midwest and West they favor more frequent and earlier tracheotomy, which is considered to be life-saving; on the other hand, in the East, where tracheotomy was first performed, most are wary about these liberalized indications and sudden "enthusiasm" for this operation, maintaining that the great majority of bulbar patients can be saved by expert management, without tracheotomy.

It will be the aim of this paper to review the

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facts relating to both sides of this controversy and attempt to deduce areas of reconciliation which may be useful in the care of these desperately sick patients. A general discussion of the technique of tracheotomy and the post-operative care, as modified by the use of the respirator and the unique conditions that obtain in poliomyelitis, will be outlined.

Clinical Pathology, Biochemical Changes and Pathological Physiology. Acute bulbar poliomyelitis presents disastrous derangements of at least 4 functions, namely: 1) swallowing, 2) breathing and coughing, 3) circulation, and 4) cerebral; one or more of these can occur in the same patient.

A principal problem in this disease is the prevention or correction of hypoxia and hypercapnea.

To aid in understanding the symptoms of this affection, bulbar polio cases can be grouped anatomically as follows: 1) Cranial Nerve Nuclei Group, with impairment of the swallowing mechanism and laryngeal function; 2) Respiratory Center Group; 3) Circulatory Center Group; 4) Bulbo-Encephalitic Group, and 5) Bulbo-Spinal Group, with paresis of the respiratory muscles.

A discussion of these symptoms, biochemical changes and anatomical groups would be of much value, but the lack of time unfortunately will not permit it.

Indications for "Early" Tracheotomy. Those workers who advocate the performance of early tracheotomy maintain that tracheotomy has too often been looked upon as a mesaure of last resort and effects have been attributed to it which were due to the serious condition for which it was done, or to the fact that intervention came too late. They assert that to prevent anoxia is better than having to correct it after permitting it to happen, since damaged nervous tissue is particularly susceptible to oxygen lack and this damage is usually irreversible. If tracheotomy can avoid even one period of severe anoxia in these cases, it would be worth while, since the margin between life and death in these patients is so narrow that one such episode may kill them. This group of workers feel that early elective tracheotomy performed before respiratory obstruction and anoxia can occur is the ideal treatment and in selected cases it is a life-saving measure. They admit that a number of these tracheotomies may be needless, but argue that the danger of waiting is much greater than that of operating.

In these cases the importance of tracheotomy is that it accomplishes a by-pass allowing air to enter the trachea without being sucked through the pharynx, thus preventing secretion from being drawn into the lower airway. Other advantages of tracheotomy are easy removal of mucus and secretion from the respiratory tract, ability to bronchoscope the patient through the tracheotomy opening without requiring his cooperation for the emergency removal of mucous plugs, either when in or out of the respirator, easier maintenance of adequate oxygen tension, and in facilitating the treatment of pulmonary edema by applying positive pressure.

These workers advise tracheotomy:

1 When, in spite of proper postural drainage and continuous pharyngeal aspiration, it is impossible to prevent pooling of secretions in the pharynx, resulting in spill-over into the airway, respiratory distress and recurrent cyanosis; in short, when there is progressive hypoxia accompanied by the presence of secretions in the pharynx.

2) With stupor or irrationality sufficient to make the patient oblivious to the accumulation of secretions in his airway, particularly if he is in a respirator.

3) If there is fluid accumulation and the patient later requires a respirator.

4) In the presence of excitement and unmanageability, causing the patient to resist pharyngeal aspiration strenuously.

5) If there is unconsciousness or pronounced restlessness in a patient who does not respond to other treatment in a few minutes.

6) If there is pronounced restlessness (which often means air hunger) or stupor in a patient in a respirator, even if the paralysis is apparently only of the spinal type.

7) When there is clinical or Roentgen-ray evidence of atelectasis, pneumonia, or pulmonary edema due to secretion in the lower airway.

8)In the presence of rapidly progressive bulbar symptoms.

9) In the presence of grave signs of vasomotor or respiratory center failure.

10) When there is inability to cough effectively, especially if the patient is in a respirator.

11) When there is a bilateral paralysis or spasm of the vocal cords.

12) On the appearance of the "angle or rope dent" sign of Sjoberg.

13) If the attendants are untrained or inefficient and the equipment is inadequate.

Galloway feels that lack of cooperation is more often a sign of anoxia than a matter of temperament. In doubtful cases he maintains that it is safer to perform a tracheotomy than to wait and, therefore, the operation should be performed more often, not less often, when the attending team has had little experience with the disease.

Arguments Against Early, Prophylactic Tracheotomy. In general, workers in the East maintain that tracheotomy is seldom necessary if the patient is given expert management and care.

Wilson stated that tracheotomy is a radical step, often life-saving and often dramatically effective. However, he felt that it is necessary only in a small fraction of the cases of bulbar poliomyelitis. Several other workers (Stimson, Shaw, Pierce and Anderson, Boines, Elkins, Howne, Wesselhoeft, and others) have seldom seen any indication for tracheotomy.

Boines states that the only true physiological indication for tracheotomy is paralysis of the larynx and vocal cords. The accumulation of oral secretions in the pharynx is not an indication, because this condition can be managed successfully with experienced medical and nursing personnel.

Stimson states that the following conditions which have been cited as indications for tracheotomy are insufficient indications. 1) Inability to cough. 2) Inability to swallow. 3) Any laryngeal involvement besides bilateral abductor paralysis. 4) Pulmonary edema. This requires positive pressure artificial respiration, but besides through a tracheotomy tube, this can be given by mask, or by hood on a respirator. 5) Atelectasis. This, he believes, requires immediate suction which can be better done visually by means of bronchoscopy, than by blind suction through a tracheotomy tube.

In general the disadvantages of tracheotomy are cited as follows:

1) The bulbar poliomyelitis patient is already weak when the ordeal of tracheotomy is added; the patient needs rest and a minimum of handling; the loss of the power of speech adds to the apprehensiveness.

2) Special equipment and nursing care are needed for the administration of humidified air, oxygen and for aspirating.

3) Children must be kept well restrained to prevent them from pulling out the tube.

4) Tracheotomy delays the return of swallowing by 2 weeks or longer.

5) The tracheotomy tube narrows the airway and acts as a foreign body to increase tracheal secretions. There is frequent crust formation which causes obstruction.

6) Constant experienced nursing care around the clock is necessary in order to avoid sudden suffocation due to obstruction of the tube, since the patient cannot call for help. Suction of the pharynx must still be continued to prevent saliva from entering the airway.

7) The constant suctioning of the trachea by the catheter causes inflammation, trauma and secondary infection. Repeated bronchoscopy may be necessary through the tracheotomy opening due to crust formation.

8) Complications of tracheotomy may be pneumothorax and mediastinal emphysema; in respirator cases there may be prolonged postoperative bleeding from the wound.

9) Delayed healing of the tracheotomy wound and stenosis of the trachea can occur.

10) There is always a certain amount of surgical risk.

Areas of Reconciliation. The preponderance of opinions in American and foreign literature favors the performance of early, elective tracheotomy as a life-saving measure. However, one should not be swayed by mere numbers, because it is only natural that workers performing tracheotomy (or any other procedure that is relatively new) will be inclined to write about it, whereas those who are relying upon older less dramatic methods will be less apt to "break into print" for the sake of denying the need for tracheotomy. When we compare the statistics from Los Angeles, where one out of every 2 bulbar polio patients was tracheotomized, with the reports from Eastern hospitals (see Stimson) where only one in 20 was tracheotomized, a ratio of about 10 to 1, we realize what a wide gulf separates the two schools of thought. Heartwarming reports of dramatic and even miraculous recoveries following emergency tracheotomy in individual cases tend to pale when mass figures of comparative mortality rates from differenct sections of the country are placed under the cold light of statistical analysis. On the other hand, individual workers

attest both by their clinical experience and a comparison of their own mortality rates, before and after the use of tracheotomy, the unquestionable value of early operation. However, the undisputed wisdom of performing tracheotomy in certain selected cases does not necessarily apply to the many others that have been performed "prophylactically".

All agree that hypoxia and hypercapnea are constant threats which must be combatted by all possible means and in selected cases tracheotomy is unquestionably a very effective means. The crux of the problem is to decide which patient will probably live without tracheotomy and which will probably die unless a tracheotomy is done. All the indications previously outlined require experienced evaluation in each individual case, and these patients have to be under constant observation by carefully trained personnel, so that crucial decisions can be made at the proper time. For example, a patient with an apparently mild paralysis may develop severe respiratory difficulty in a very short time, while a patient with bulbar signs that appear to be progressing rapidly may recover almost completely over night.

There is no question that a tracheotomy should be performed in those cases where there is a clear indication of respiratory obstruction which can not be rectified by any other means at the command of the attending physicians. Also, in those cases where a patient seems desperately ill and tracheotomy seems a very dangerous procedure, experience has shown that the patient should be given the benefit of the doubt and the operation performed, in spite of the understandable reluctance on the part of the surgeon. The charge by some workers that the operation is mutilating seems trivial; of what moment are esthetic considerations in a matter of life and death? Furthermore, if a tracheotomy is properly performed and the postoperative care is excellent, I have never felt that the operation per se is particularly harmful. In these cases, if some avoidable tracheotomies are performed, I feel certain that they will not alter the vital statistics. Therefore, in those institutions where expert care is constantly available, the performance of a tracheotomy will not enhance the danger, but on the other hand, may prevent the occurrence of sudden anoxia in a small number of cases.

It has been stated that tracheotomy is more necessary when the attending team has had meager experience with the disease; that if all personnel were thoroughly trained and the mechanical arrangements perfect, tracheotomy might seldom be required, but that unforseen failures occur too easily. As an example, Galloway cites an instance where an assistant substituted a fine medicine dropper for a proper glass connecting tube and thus prevented proper aspiration for 2 half-hour periods resulting in anoxia and a decerebrate state. However, this does not strike me as a valid reason for early, prophylactic operation, because poor post-tracheotomy care can lead to respiratory obstruction with the same dire results. It is difficult for me to see, in the light of my past experience with the general caliber of post-tracheotomy care, why there would be any likelihood of improved care of a tracheotomized bulbar patient by the same type of untrained and incompetent personnel as existed prior to the tracheotomy. Certainly the lack of training and unfamiliarity would not cease abruptly merely with the performance of a miraculous tracheotomy; as a matter of fact tracheotomy might even complicate the treatment in such a situation. Where neither the equipment nor the personnel is adequate, then it would seem to me that the early, elective, so-called "prophylactic" tracheotomy could very well be deferred until there is a clear indication for operation. Actually these cases require expert care and excellent equipment; otherwise, no matter what is done, the results will be poor.

All efforts should be made to get the patient to relax and cooperate; confidence must be instilled in them and any appearance of anxiety and excitement must be avoided. Certainly in a patient who is emotionally unstable and will not cooperate, the wiser thing would be to perform an earlier tracheotomy.

There are times when it may be extremely difficult to tell whether a patient's respiratory trouble is due to central disturbance of the respiratory center or to pharyngeal secretions. In that case a bronchoscopy could be done for verification or even a tracheotomy would be justified even though it might prove to be ineffective.

Wilson feels that tracheotomy is a radical step but is often life-saving. All will agree with him when he says, "If the pharynx cannot be kept clear enough so that the patient can get

the needed rest, a tracheotomy should be done . . . In a patient with pharyngeal paralysis whose every breath must be calculated and planned and a continual alert must be maintained in order to expel accidentally aspirated secretion, fatigue gradually develops. This must certainly be prevented."

It is surely a difficult matter to decide at which point in the course of the disease a tracheotomy should be done, if it is to prove life-saving, because there is usually no single sharply defined indication, except abductor paralysis of the vocal cords, which requires immediate tracheotomy. However, when proper postural drainage and aspiration (both pharyngeal and bronchial) are ineffective in allowing the patient to rest and sleep, a tracheotomy is necessary and one ought not to wait for severe choking attacks with cyanosis to prove its necessity.

Finally the criteria for the performance of a tracheotomy cannot be hard and fast; each case is a law unto itself. The decision will depend on the physician's experience in the management of these cases. The adequacy of the facilities at his disposal, including the quality of nursing care, must be important factors in this decision.

In general, the laryngologist plays a minor part in the polio team, but in this group of cases he must be prepared to share a large part of the responsibility. Therefore, he should be asked to see these patients early, so he can observe them in the light of his specialized experience and determine the type and progress of obstructive factors. This would help him determine the most propitious time to intervene, before serious damage can occur from anoxia. In small communities where there is not enough polio to give each man adequate training and experience in the handling of these cases, a polio team should be set up, and the direction of the severe cases transferred to this team. Certainly at least 2 laryngologists should be part of the team, in order that one could be on constant call.

Technique of Tracheotomy. The performance of a routine tracheotomy will not be discussed here. (For a description of the minute details concerning this operation the interested reader is referred to the writer's book, "Acute Laryngotracheobronchitis," published by Grune and Stratton, 1949.) Special considerations required because of the unique conditions that obtain in poliomyelitis, particularly when the respirator has to be used, are outlined below:

If time permits and the patient can understand, it would be wise to explain that he will be unable to talk after the operation, but will again be able to speak at a later date.

1) Tracheotomy may be performed either under local anethesia or by means of endotracheal anesthesia, whichever is deemed more suitable. In children particularly, a general anesthetic is recommended, some preferring the use of avertin. If necessary, curare may be given to relax the neck muscles and make the head freely movable.

2) Use of the bronchoscope. If there is little or no respiratory obstruction or if a patient's lack of cooperation precludes its use, the bronchoscope may be dispensed with. In all other cases, it is wiser to insert a bronchoscope (or endotracheal tube), both to assure free breathing during the operation and to act as a guide upon which to cut down. This will help prevent the development of pneumothorax and mediastinal emphysema. In the event that there is paralysis of the vocal cords or severe laryngeal spasm, an endotracheal tube is essential, a mask obviously being ineffective.

3) A so-called high tracheotomy, through the second tracheal ring, should be performed, so that if a respirator is later required the tracheotomy tube will remain on the outside.

4) Be prepared to cope with bleeding from the isthmus of the thyroid gland which may have to be cut.

5) Always use the largest tube that can be inserted comfortably, being careful that there is no excessive pressure, which could cause necrosis of the cartilage. In children, be sure that the tracheotomy tube does not rest on the bifurcation of the trachea. Some have advised cutting off the end of the tube in such a situation; my practice has been to add 2 or more gauze pads placed under the flange of the tracheotomy tube. This will keep the tube from extending too far down the trachea.

6) If the patient is to be placed in a respirator immediately following tracheotomy, respirations can be maintained by the use of a tight-fitting anesthesia mask, with oxygen insufflated by manual pressure of the bag. If a Bennett flow-sensitive positive pressure machine is available, this can be used during the oper-

ation. In this way the tracheotomy is done under a closed system of anesthesia, preferably over a bronchoscope.

7) If the patient is already in a respirator and cannot breathe well enough to permit carrying out a tracheotomy with the respirator opened up, the following techniques may be employed:

a) Using positive pressure mask (Bennet or other type) the patient can be pulled far down into the opened respirator, but with the head still outside. With this technique the neck must be pulled up through the collar after the operation and the respirator closed and turned on as soon as the trachea is opened. A finger should be placed over the tracheotomy tube opening and the positive pressure oxygen continued until all is ready and the respirator is working again.

b) The patient's body, including the head, may be pulled down inside the opened respirator and the anesthetic or oxygen can be applied through the collar opening of the respirator. As soon as the trachea is opened the oxygen tube is attached directly to the tracheotomy tube and the patient's head and neck drawn through the collar opening. This latter method has been deemed more suitable.

A number of devices to hold the rubber collar away from the tracheotomy tube have been suggested, but time will not permit a description of these.

The writer has used a ribbon abdominal retractor placed horizontally between the steel collar and the respirator. It was molded so that it pushed the rubber collar toward the respirator, holding it away from the tracheotomy tube. This was used in an emergency and proved both simple and satisfactory.

Post-Operative Care. 1) **Aspiration.** Secretions should be removed at intervals of 15 to 30 minutes, as best suited in the particular case. The catheter should have smooth rounded ends and only one or 2 side openings. Nurses must be taught to use extreme caution and gentleness. In order to avoid trauma to the tracheal mucosa the rubber tube should be pinched off during its insertion, which is timed with inspiration. When necessary, the rubber tube should be inserted down to the bronchi in order to remove inspissated plugs. The catheters can be sterilized in a solution of Zephiran, 1:3000.

2) **Postural Drainage.** The foot of the bed or respirator should be raised at an angle of 25° to facilitate drainage by gravity. However this should be done only for a period of 5 to 10 minutes out of every hour, because longer periods cause a marked fall in the tidal air, as demonstrated by Bower and his associates. It is a good idea to instill a half dropper-full of a solution of sterile 3% sodium bicarbonate, normal saline solution or penicillin (5000 units per cc.) before raising the foot of the bed, and then aspirating while the head is lowered. The patient should also be encouraged to cough at this time and helped by placing the finger over the tracheotomy opening during expiration. If the patient is unable to cough, he can be helped by applying manual pressure to the thorax.

3) **Humidification.** The patient should be in a warm, moisture-laden atmosphere, with the temperature about 70° to 75° F. and the relative humidity 80 to 90%. If the patient is given oxygen, carbon dioxide and moisture should be added.

4) **Feeding.** An adult should receive from 2500 to 3000 cc. of fluids, roughly in the proportion of one-third isotonic sodium chloride or Ringer's solution and two-thirds of 5% dextrose in water. It is important to see that the patient does not become dehydrated so that the secretions get too viscid. Over-hydration can result in cerebral or pulmonary edema. After the first few days a protein hydrolysate and vitamins (500 mg. B complex and 500 mg. ascorbic acid) may be given intravenously. Gavage feeding can be started after the patient begins to swallow.

5) **Ventilation.** A newly devised respiratory ventilation meter (Bennett) has been helpful in determining whether the patient in the respirator is obtaining adequate ventilation. By setting the negative respirator pressure and positive oxygen pressure at various strengths and checking the meter, optimum pressures can be arrived at. The rates and pressures must be checked carefully and regularly several times a day. It has been found that in tracheotomized respirator cases receiving added positive pressure breathing, there is less variation in the pH of the blood and a significant decrease in the frequency of pulmonary acidosis.

6) **Antibiotics.** Penicillin should be given routinely in these cases to combat and prevent infection. Terramycin can be given intravenously. Penicillin may also be given as an aero-

sol.

7) **Roentgenograms of the Chest.** These should be taken routinely after the tracheotomy and whenever warranted thereafter.

8) **Removal of Tracheotomy Tube.** The tracheotomy tube should not be removed until quite some time after the patient is out of the respirator, because many patients get repeated episodes of atelectasis, due to their inability to cough effectively. It would be wiser to leave the tube in too long rather than too short a time. The tube should first be plugged for 2 days to a week before removing it entirely.

9) **Nursing Care.** These patients present a very difficult nursing problem. Therefore, only highly competent nurses, well trained in the care of tracheotomized patients, should be assigned to these cases. An inexperienced nurse may fail to prevent or correct an episode of cyanosis which may lead to a fatal outcome. It devolves upon the attending physician to instruct each nurse in the care of each inidividual patient pointing out the problems, the dangers, and the treatment in the most detailed manner.

10) **Positive Pressure Oxygen Apparatus.** Use of positive pressure oxygen apparatus is advised. Several devices have been described, but the Bennett flow-sensitive intermittent positive pressure breathing unit appears to be the most valuable. It is a mobile pressure breathing and resuscitation apparatus which has been of great value in the emergency management of polio patients with respiratory paralysis and in those requiring anesthesia.

Summary. A general review of the problem of respiratory obstruction in bulbar poliomyelitis together with the pros and contras of early tracheotomy in these cases has been presented. An attempt was made to find middle ground which could serve as a basis for treating these desperately ill patients. Special points in the performance of tracheotomy and the after-care as related to the unique conditions that obtain in bulbar poliomyelitis have been outlined.

PHOENIX *Clinical* CLUB

The Case History in this discussion is selected from the Case Records of the Massachusetts General Hospital, and reprinted from the New England Journal of Medicine. The discussant under Differential Diagnosis is a member of the staff of the Massachusetts General Hospital. The other discussants are members of the Phoenix Clinical Club.

CLINIC CLUB CASE NO. 30

A FORTY-nine-year-old man entered the hospital because of difficulty in urination.

For two months he had frequency (ten times during the day and five times at night). This was associated with weakness and hesitancy of the stream. There was no dysuria, gross hematuria, back pain, feverishness or vomiting. One week before entry he had an attack of dyspnea, wheezing and cough, and he developed conjunctival and palpebral hemorrhages. The blood pressure was 120 systolic, 80 diastolic. The legs became edematous.

Physical examination revealed a pale drowsy man. The face was puffy, and there were conjunctival and palpebral hemorrhages. The eye grounds revealed flame-shaped hemorrhages, narrow arteries and blurring of the disk margins. The neck veins were distended and pulsating. There was an apical systolic murmur. In the abdomen there was a fluid-filled, tense, nontender mass extending upward from the pelvis to the level of the umbilicus. Rectal examination revealed tender external hemorrhoids and a questionably enlarged prostate. The legs and feet were edematous.

The temperature was 99° F., the pulse 88, and the respirations 16; the blood pressure was 175 systolic, 90 diastolic.

Examination of the blood disclosed a hemoglobin of 5 gm. and a white-cell count of 7300. The nonprotein nitrogen was 200 mg., the calcium 6.8 mg. and the phosphorus 8.2 mg. per 100 cc.; the alkaline phosphatase was 3.0 units, and the carbon dioxide was 10.6 milliequiv. per liter. The prothrombin time was 18 seconds (control, 17 seconds). Repeated examinations of the urine gave a reaction of pH 6.0 to 7.0, with a specific gravity of 1.008 to 1.014, and a one plus to four plus test for albumin. The sediment showed many red cells and one one occasion 20 to 30 white cells per highpower field. Cultures grew colonies of Staphylococcus aureus and colon bacilli.

An electrocardiogram showed digitalis effect only. An x-ray film of the chest revealed basal congestion of the lungs and some left ventricular hypertrophy. A plain film of the abdomen was normal.

The patient was catheterized in the Emergency Ward, and 750 cc. of clear urine was removed. A few hours later, after several unsuccessful attempts to pass a No. 18 catheter, a No. 20 Foley catheter was passed without difficulty, and 1000 cc. of clear urine removed. There was a good deal of subsequent bleeding into the bladder, and clots were removed by irrigations as required. He was digitalized and given resuspended red cells in 10 per cent dextrose in water. Fluids were forced to 4000 cc. a day. The palpebral hemorrhage and edema gradually subsided. After a few days the indwelling catheter became very painful. He began to vomit, and fluids were then pushed intravenously and by proctoclysis. The uremia and acidosis increased. Repeated nonprotein nitrogen estimations were 175, 250, 210, and 280 mg. per 100 cc. with corresponding carbon dioxide estimations of 10.6, 14.7, 13.4 and 17.5 milliequiv. per liter. He died on the tenth hospital day.

DR. C. B. WARRENBURG

In this case we are considering today, there is undoubtedly much information regarding this patient that does not appear in our protocol. The reason is, of course, that the diagnosis would probably be given away by such findings or history. The patient obviously is suffering from advanced renal insufficiency, even to the state of uremia as exemplified by the findings on the physical examination and laboratory work. In addition, the patient has a congestive heart failure clearly expressed by distended and pulsating neck veins, edema, along with the dyspnea, wheezing, cough, and x-ray findings of the chest. The diagnostic problem then, is to find the cause of marked cardio-renal insufficiency in a 49 year old man with a medical history that dates back only 2 months and whose chief complaint is difficulty in urination. Now, I feel sure that this man's medical history has more information in it than that, and if that the information were known, we could probably proceed in a more orderly manner toward the proper diagnosis.

The patient may very well have an acute or chronic glomerulonephritis. At times it is impossible to make a differential diagnosis between these two. However, his age is very much in favor of an exacerbation of a chronic glomerulonephritis. The tortuous arteries, the changes in the eye grounds, the severe anemia, the fixation of the specific gravity of the urine, and the lack of concentration, definitely point to a chronic process. The differentiation of a nephrotic phase of chronic glomerulonephritis and true nephrosis is also difficult. The elevation in blood pressure in our patient is not marked, yet the eye ground changes are present. The moderate hypertension speaks against chronic glomerulonephritis. In all patients presenting a picture of advenced renal insufficiency, the possibility of renal disease other than nephritis must be borne in mind. Bilateral pyelonephritis with or without stones, bilateral renal tuberculosis, hydronephrosis due to ureteral or prostatic obstruction, and advanced polycystic disease of the kidney may all terminate in uremia as our case today does. Hence, as stated earlier, when confronted with advanced renal disease in which real etiology is not certain, it is often impossible to characterize the renal lesion without knowledge of the natural history of the disease and the application of appropriate urologic techniques.

Hydronephrosis by definition is dilatation of the pelvis and calices of the kidneys with pressure atrophy of its substance, all of which is the result of obstruction. Obstruction of the urinary tract causes the greatest degree of hydronephrosis when it is partial, gradual, or intermittent. When the obstruction is sudden and complete, no urine is secreted, increase in intrapelvic pressure is less marked, and renal atrophy maybe primary or follow hydronephrosis. The obstruction maybe anywhere along the urinary tract. When it is below the bladder as in prostatism or uretheral stricture, the lesion is bilateral, infection is predominant, and the degree of hydronephrosis is less marked.

It is my feeling that in this case today, we are dealing with an infected hydronephrosis or pyelonephritis due to obstruction below the bladder, that this is a chronic process and had led to the condition that we find this patient in, namely, congestive heart failure and uremia. The cause of obstruction may be outside the urinary tract, as neoplasms, adhesions, operative trauma, aberrant blood vessels, or pressure from a pregnant uterus. The common causes of ac-

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22 Published Reports Covering Treatment of 1443 Peptic Ulcer Patients with Banthine

Comprising the reports published in the literature to date which give specific facts and figures of the results of treatment

AUTHORS	No. of Patients	Chronic, Resistant to Other Therapy	TYPES OF ULCERS				RELIEF OF SYMPTOMS (Chiefly Pain)				Surgery or Complications[1]	Side Effects Requiring Discontinuance of Drug[2]	EVIDENCE OF HEALING			
			Duodenal	Jejunal	Stomal	Gastric	Good	Fair	Poor	No Report			Complete	Moderate	None	No Report
Grimson, Lyons, Reeves	100	100	93	7			80	11	4		5		47		19	29
Friedman	15	15	14			1	5		4	6[3]			2			13
Bechgaard, Nielsen, Bang, Groelund, Tobiassen	26	26	21			5	16	4	6				8	6	12	
McHardy, Browne, Edwards, Marek, Ward	162		162				136	12	11		3	1	14	9	7	129
Segal, Friedman, Watson	34	34	34[4]				14	13			7	2	5		8	14
Brown, Collins	117	99	117				97	7	8		5	8	55	9	8	40
Asher	77		65		7	5	52	9	16			16		9	21	47
Rodriguez de la Vega, Reyes Diaz	5	4	5				4		1					3	2	
Winkelstein	116	116	102	8		6	102		14				53		18	45
Hall, Hornisher, Weeks	18	18	18				11		1	6[5]			18			
Maier, Meili	38	38	24			14[6]	27	7	4[7]				10	2	5	21
Meyer, Jarman	25	18	25				21		4							25
Poth, Fromm	37	37	37				33	3	1				33	3	1	
Plummer, Burke, Williams	41	41	41				36		5				38		3	
McDonough, O'Neil	104	100	104				63	10	31			11	4		11	89
Broders	60	60	58		1	1	35	19	6				10	1	49[8]	
Legerton, Texter, Ruffin	11		11				11									11
Holoubek, Holoubek, Langford	76	69	76				35	27	10		4	10	26		10	36
Ogborn	42		39	2		1	42[9]									42
Shalken	48	48	48				33	10	3		2		33	10	3	
Johnston	145	145	145				143		2			2	143		2	
Rossett, Knox, Stephenson	146		141			5	146					4[10]	53			93
TOTALS	*1443*	*968*	*1380*	*17*	*8*	*38*	*1142*	*132*	*131*	*12*	*26*	*54*	*552*	*52*	*179*	*634*
PERCENTAGES		*67.8*	*95.6*	*1.2*	*0.6*	*2.6*	*81.3*	*9.4*	*9.3*			*3.7*	*70.5*	*6.6*	*22.9*	

1. Not included in tabulations.
2. Included in "Relief of Symptoms" as "Poor" and in "Evidence of Healing" as "None."
3. Four had no symptoms when Banthine therapy was begun.
4. Of which seven were penetrative lesions and five partially obstructive.
5. No symptoms were present in four.
6. Two with symptoms only; no demonstrable ulcer.
7. Three were psychopathic patients and one had a ventricular ulcer of the lesser curvature.
8. Roentgen findings after treatment period of two weeks; forty-seven had duodenal deformity.
9. All returned to work within a week.
10. In these four, after relief of symptoms, Banthine was discontinued because of urinary retention.

During the past three years, more than 250 references to Banthine therapy in peptic ulcer and other parasympathotonic conditions have appeared in medical literature. Of these reports, 22 have presented specific facts and figures on the results of treatment in a total of 1,443 peptic ulcer patients, 67.8 per cent of whom were reported as chronic or resistant to other therapy. These results are tabulated above and show:

"Good" relief of symptoms was obtained in 81.3 per cent of the 1,405 patients on whom reports were available.

"Complete" evidence of healing was obtained in 70.5 per cent of the 783 patients on whom reports were available.

In all but 9.3 per cent, relief of pain was "good" or "fair." In all but 22.9 per cent, evidence of healing was "complete" or "moderate."

During treatment, 26 patients required surgery or developed complications other than ulcer which required discontinuance of the drug before results could be evaluated.

Of the remaining 1,417 patients, only 3.7 per cent experienced side effects sufficiently annoying to require discontinuance of the drug.

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quired obstruction within the urinary tract, are stones, stricture, spasm, foreign body and tumor. In view of the fact that this man's prostate is questionably enlarged, it is our contention that there is a median bar enlargement or a bladder neck constriction from some cause or other. Associated with this, it is believed that the patient has diverticula of the bladder which accounts for the 750 cc. of urine that was removed by catheter and only a few hours later, another 100 cc. was removed by second catheterization. This was probably the emptying of a saculation of the bladder wall into the bladder after the first catheterization was carried out. There are no symptoms or findings of kidney pain or kidney enlargement in this case which are against the diagnosis of hydronephrosis, but as mentioned earlier, when obstruction is below the bladder, the degree of hydronephrosis is found to be less marked.

The chain of events then that probably occurred to present this terminal picture is chronic bladder neck constriction or median bar obstruction with a slowly developing hydronephrosis and hence, gradual and increasing damage to the kidney substance; the associated diverticulae of the bladder that is so common in urinary obstruction below the bladder neck or at the bladder neck; and the terminal congestive heart failure and uremia.

My second diagnosis would be chronic glomerulonephritis with a terminal heart failure and uremia and a rather recent bladder neck constriction or obstruction from some cause undetermined.

DR. B. P. FRISSELL

I am able to make one, and only one, positive statement concerning this case and that is that our patient most certainly died from the end results of extreme renal failure or uremia. Practically all of the classical signs and symptoms of the so-called "end-stage kidney" are given in the protocol. The severe anemia, the retinal changes, the conjunctival hemorrhages, the edema, the left-sided heart failure, the acidosis, the low specific gravity of the urine, and the blood chemistry changes, including the elevated NPN, would all appear to clearly indicate longstanding, advanced renal disease.

There are, however, a few disconcerting facts with which we have to reckon. I am well aware of the futility, as well as the impropriety, of mentioning the inadequacies of the history at this point but I have read this protocol through numerous ti-mes in an attempt to find some little reference to the patient's past history without success. I certainly find it difficult to start this man's illness two months before admission and less than two and one-half months before his death. Likewise, the blood pressure readings are not what we would expect to find in terminal renal disease. However, we must conclude from the eye ground changes that hyptertension had existed at some period of time during this man's illness for our present conception of socalled albuminuric retinitis is that it is not the direct result of uremia per se but that it occurs as a result of hypertension.

The urinary findings do not include casts of any type. One wonders how much the albumin content of the urine was reflected in the findings of red cells and likewise how much of the red cell content of the urine was due to trauma from catheterization which was admittedly enough to require irrigation of the catheter to remove clots from time to time. The finding of pus cells in one occasion suggests infection. Whether this was of primary importance, or secondary to catheterization, is unknown. The most disconcerting information in the protocol is the obvious bladder retention on admission to the hospital with a total of 1750 cc. of what is described as clear urine within a period of a few hours after admission to the hospital.

I find the literature more consoling than helpful in solving our problem. Harrison has this to say for instance, "Sometimes the decision as to the exact etiology of the uremic syndrome may be difficult even at the autopsy table." From a practical standpoint, however, the problem would appear to be that of deciding whether we are dealing with primary renal disease such as nephrosclerosis, glomerulonephritis, pyelonephritis — as well as several other nephritic syndromes which will be discussed briefly later, or if the primary process is an obstructive lesion in the lower urinary tract with secondary involvement of the renal structures, so-called hydronephrosis.

The first thing that comes to mind in considering the obstructive lesions in a middle-aged male patient is of course prostatic hypertrophy. The patient, however, at 49 years is a little too young for the usual type of prostatic disease and the "questionably enlarged prostate" is not quite adequate to fit this picture. Likewise, the duration of two months symptoms is inadequate to

produce the extremes of renal failure if this were our diagnosis. Benjamin Brody long ago said—"When the hair becomes grey and thin, when there is found a white zone about the cornea, at the same time ordinarily, and I dare say invariably, the prostate increases in volume." This stage in life usually occurs past 50, rather than before it. There is one type of so-called "median bar" hypertrophy which I was surprised to learn from my recent research is not, technically speaking, a true component of the prostate. This tissue is comprised of both fibrous and glandular tissue. It is situated just distal to the trigone at the urethral orifice in the region of the verumontanum. It tends to grow upward from the floor of the urethra and soon produces a ledge or ridge across the base of the bladder which serves to impede the outflow of urine. Involvement of this portion of the urinary tract is usually secondary to inflammatory disease of the urethra and prostate. In addition to offering mechanical obstruction to the outflow of urine from the bladder, there is also interference to the normal action of the internal sphincter in cases of median bar involvement. Greater intravesical pressure is required to maintain urinary flow. This results in gradual hypertrophy of the bladder muscles and eventually trabeculation, sacculation, and bladder dilatation follow, and complete evacuation of the urine becomes impossible and, as the bladder fails, associated renal dysfunction results. The course of this disease is usually modified by infection and frequently by diverticuli of the bladder, stone formation, and neoplasm. Cases of so-called "silent uremia" due to this type of involvement of the posterior urethra have been described and I wonder if we are not dealing with this type of process in the case at hand. The finding of pus in the urine may not be a constant factor as described in this case and the urine culture findings of colon bacillus and Staph aureus organisms would lend support to this diagnosis. Once the kidney is damaged severely, the signs are those of uremia as from any other cause. The primary destructive process in hydronephrosis of this type, however, is localized in the region of the tubules to a greater degree than it is in glomerular structures of the kidney so that we can expect copious outputs of low-specific gravity urine in contrast to the scanty urine of glomerulonephritis.

Other obstructive lesions in the region of the neck of the bladder which need to be considered are congenital urethral folds which act in a valve-like fashion to prevent the outflow of urine from the bladder although they freely admit passage of a catheter. This condition is usually one of childhood although there are a few cases on record of symptoms developing during adult life. Likewise diverticulum of the bladder and tumors of the bladder neck must be considered and an obstructive tumor in the region of tht trigone of the bladder cannot be ruled out in this case. One would expect, however, frankly bloody urine, more dysuria than our patient experienced, and would not expect a marked degree of renal damage due to the rapid progression of the local process.

In discussing primary upper urinary tract lesions, there are three common conditions which are responsible for most uremia and which, terminally, can be seldom differentiated; namely, malignant nephrosclerosis, glomerulonephritis, pyelonephritis. In cases of nephrosclerosis, hypertension and vascular changes are of primary importance. The history of this disease is certainly withheld from us in the case under consideration. Glomerulonephritis, the most common of all nephritides and the most likely to produce terminal uremia likewise cannot be differentiated from the history. In pyelonephritis, the history of repeated febrile episodes with pyuria, etc. is essential to diagnosis. These conditions all result in a contracted sclerotic kidney and in the terminal stages, anuria is the rule rather than polyuria. None of these conditions explain the terminal event of urinary retention in our case with obvious polyuria, unless perhaps there be some complicating factor in the lower urinary tract in addition to the primary involvement of the kidney. Of course a "double-barreled shotgun" would be a very good way out in this case and were I allowed such a choice I would perhaps seek refuge in a diagnosis of one of the above primary nephritides of longstanding complicated in its terminal stages by an obstructive lesion at the vesicle neck.

There are a few other renal syndromes which are perhaps worthy of mention. *Primary amyloid disease* of the kidney may produce extensive tubular damage and ultimately result in terminal uremia. The diagnosis is made by the Congo red test and primarily at the autopsy table. *Multiple myeloma* of the kidney has been described and the most recent theories as to its etiology indicate that the process is due to

blockage of tubules by deposits of Bence-Jones protein. We are not given the benefit of a Bence-Jones test on the urine in our case and there is no history of skeletal involvement. So-called "*gouty nephritis*" is produced by similar blockage of tubule structures by uric acid crystals, a rare condition which does not fit our needs. *Polycystic disease* of the kidney primarily occurs in younger individuals but can occur in mid-life resulting eventually in terminal renal failure. The condition is usually bilateral and results in destruction of the parenchymal tissues of the kidney by pressure. As a general rule, palpable masses can be made out in the abdomen and of course pyelograms are diagnostic. Again, it is my feeling that none of the above conditions logically explain the terminal urinary retention and apparent tendency to polyuria. Nephrotic involvement of the kidney due to *syphilis* has been described, and if complicated by a gummatous process in the region of the trigone of the bladder, could produce lower urinary tract obstruction. This disease process could be very easily eliminated by a negative serology; otherwise must remain in our thinking. It is, however, a rare disease. *Renal tuberculosis* deserves mention as one of the primary renal diseases which may result in uremia. It is primarily a disease of childhood but does occur at all ages. In childhood, it is usually bilateral. This is said to be true in cases under six years of age. In older individuals, it is usually unilateral and is in 60% of the cases limited to the right kidney. Primary tuberculosis in the lungs and elsewhere in the body is usually in evidence. X-ray of our patient's chest did not reveal any pathology of this type apparently. Hematuria is one of the cardinal symptoms of renal tuberculosis, but likewise bladder irritability and dysuria are present. These are absent in this case. Involvement of the trigone area of the bladder or of the posterior urethra in a tuberculous abscess could of course produce urinary tract obstruction at this level. However, one would expect much more bladder distress than our patient had and most likely over a much longer period of time. Acid-fast bacteria are found in a good percentage of cases of this sort. Cultures usually will reveal the organism.

In conclusion, I am going to defend the hypothesis that this patient had primarily a lower urinary tract obstructive disease most likely a "median bar" involvement of the posterior urethra with subsequent hydronephrosis and pyelonephrosis which of course assumes that he had symptoms of consequence in his past history, which are not included in our protocol. I prefer this diagnosis out of consideration for the prominence of the obstructive manifestations of the disease on admission to the hospital and the absence of the finding of casts in the urine. I believe it is most likely that the hemorrhage occurring after catheterization was the result of pressure changes in an overdistended bladder which would be expected to undergo tremendous amounts of change as the result of the removal of nearly two litres of urine over a short period of time. It is quite possible, however, that a fungating tumor mass at the neck of the bladder might likewise have been traumatized by catheterization. I neglected earlier in the discussion to rule out stricture of the urethra on the basis of the apparent uncomplicated passage of a catheter in the Emergency Ward of the Hospital on admission.

I find it difficult, however, to ignore the fact that this man's primary pathology might well have been in the upper urinary tract and, as my second choice in diagnosis, would choose one of the common nephritides previously mentioned as the primary diagnosis, the terminal stages of the illness complicated by obstruction of the lower urinary tract possibly either from edema of the posterior urethra or some independent process occurring in this region. This diagnosis would better explain the hypertension which, although not evident in the protocol, we must assume has been present at some stage in this man's illness and it would better explain the hypertension which, although not evident in the protocol, we must assume has been present at some stage in this man's illness and it would better explain the extreme degree of anemia unless we assume that over a period of time, he had profuse hematuria which we are not led to believe from the protocol. This incidentally can occur in hydronephrosis due to lower urinary tract obstruction.

DIFFERENTIAL DIAGNOSIS

Dr. Fletcher H. Colby: May we see the x-ray films?

Dr. Stanley M. Wyman: The heart shows enlargement, chiefly of the left ventricle. The aorta is unusually tortuous for a man of this age. The appearance suggests hypertension. There is an area of ill defined, hazy density in

the middle thirds of both lung fields, with slight accentuation of the basilar markings. No unusual soft-tissue masses are visible in the film of the abdomen, and there are no unusual areas of calcification.

Dr. Colby: Can you make out the renal outlines at all?

Dr. Wyman: I cannot make them out with certainty.

Dr. Colby: You cannot say whether or not they are enlarged?

Dr. Wyman: Not with enough certainty to rely on. My guess is that they may be slightly small.

Dr. Colb: The fact that a large catheter passed more easily than a small one is of no great significance — it is not unusual for a patient to have enough spasm of the sphincter muscles for that to happen. The subsequent bleeding into the bladder is not unusual. Any overdistended bladder may bleed in this manner when rapidly emptied.

When the patient entered the hospital he obviously was critically ill. All the signs and symptoms that we are given point to a lesion of the heart, as well as to some degree of urethral obstruction, and certainly to severe renal damage. All these signs and symptoms may be integrated, although I cannot be certain.

Let us take up the obstructive feature first. The first possibility is some sort of congenital abnormality, which should have made itself evident before the age of forty-nine however. Such lesions as congenital valves and congenital stricture of the urethra occur in young persons and become evident before this age. A stricture of the urethra can be eliminated by the fact that the patient had nothing in the past history to suggest it, and in the Emergency Ward he was easily catheterized. A catheter cannot be passed easily by a stricture of any severity.

Does a patient of forty-nine have benign hypertrophy of the prostate? He may. I recently operated on a man of forty-nine who had a definitely obstructed prostate with a stone in the bladder. I said, "You are young to have this." And he answered, "I know it; my brother is fifty, and last year he had his prostate operated on."

This man entered the hospital because of difficulty in urinating and with a past history of weakness and hesitancy of the stream. Certainly, prostatic hypertrophy is a definite possibility, and probably infection as well. The dyspnea, wheezing and cough, if not asthmatic (and apparently they were not), suggest cardiac disease. This is confirmed by the systolic murmur, distended neck veins, pulmonary congestion and left ventricular hypertrophy. We can therefore say that he had hypertensive heart disease. One thing that bothers me a good deal is the fact that the blood pressure was 120 systolic, 80 diastolic, and a week later 175 systolic, 90 diastolic. Is that correct?

Dr. Edward F. Bland: Not quite. On admission it was 200 systolic, 100 diastolic.

Dr. Colby: There was not the change from 120 to 175 systolic in a week?

Dr. Bland: A later reading was 165 systolic, 90 diastolic, and as the patient became sicker the pressure was lower.

Dr. Frederick C. Goetz: The blood pressure was 125 systolic, 70 diastolic, about 3 weeks before he entered the hospital, according to his doctor.

Dr. Colby: Was he pretty sick then?

Dr. Goetz: Yes; he was.

Dr. Colby: The general signs and symptoms are those of a marked degree of renal damage in a patient who was not able to concentrate urine above 1.014. He had a low specific gravity of urine with albumin, a low serum calcium, a high phosphorus and marked anemia. The marked anemia must mean a disease of long standing. The hemoglobin was 5 gm. He also had eye signs and edema. It seems unlikely to me that such a degree of renal change in a man of forty-nine could have been associated with a hypertrophied prostate, so that I think we have to look for the chief lesion in the kidneys.

What sort of lesion could it have been? The lack of pain in the past and the other symptoms seem to eliminate a certain number of renal lesions, such as hydronephrosis and calculus disease, and the obstructive lesions that affect the upper urinary tract. On the other hand this must have been a bilateral affair, and it seems to me that the most likely possibility is a severe degree of chronic pyelonephritis. This is borne out by the urinary findings, the low specific gravity, the edema, the obviously failing renal function, the acidosis and death and uremia. He had a mixed infection, staphylococcus and colon bacilli in the urine, which is quite consistent with marked pyelonephritis. Acute pyeloneph-

ritis is much more apt to have only one organism.

One condition that I cannot rule out, although I have no evidence to favor it except a pair of kidneys that were failing, is bilateral polycystic disease, which is always a possibility. This man was at the age when polycystic disease is apt to make itself evident. There was nothing in the past history to suggest it, however, such as back pain, gradual rise in blood pressure and attacks of gross hematuria. But I cannot eliminate the possibility. That is why I asked particularly about the x-ray findings, to see if we could get any additional information from Dr. Wyman.

My diagnoses are therefore hypertensive heart disease, benign hypertrophy of the prostate and uremia due to pyelonephritis. The patient probably had a pair of lungs that showed quite a bit of edema.

Dr. Tracy B. Mallory: Can you add anything, Dr. Bland?

Dr. Bland: I cannot add anything diagnostically to what Dr. Colby has said. However, the service deliberated at length regarding treatment. Here was a man with uremia, swollen neck veins and extensive edema. Th one finding that I would like to emphasize is the low hemoglobin, and we have only recently appreciated that under this circumstance one can get cardiac failure with a high cardiac output and swollen veins. Hence, whatever we could do to improve the hemoglobin level might help him. In spite of the congestive failure, we gave him washed red cells, and he was on a rigid low-sodium regime. The hemoglobin increased from 5 up to 10 gm. The distention of the veins actually lessened as the hemoglobin improved. The edema was not particularly influenced, and he slowly worsened in the course of ten days and died in uremia. We did not know the exact nature of the difficulty in the genitourinary tract, because he was so desperately ill throughout the stay on the ward that further study was inadvisable. We thought it was due to obstruction, back pressure on the kidneys and, most likely, infection.

CLINICAL DIAGNOSIS

Uremia, cause unkown.

DR. COLBY'S DIAGNOSIS

Hypertensive heart disease.
Benign hypertrophy of the prostate.
Uremia, due to pyelonephritis.

ANATOMICAL DIAGNOSIS

Benign prostatic hypertrophy, with obstruction.
Hypertrophy of bladder.
Hydronephrosis, bilateral.
Parathyroid hyperplasia, ascending, slight.

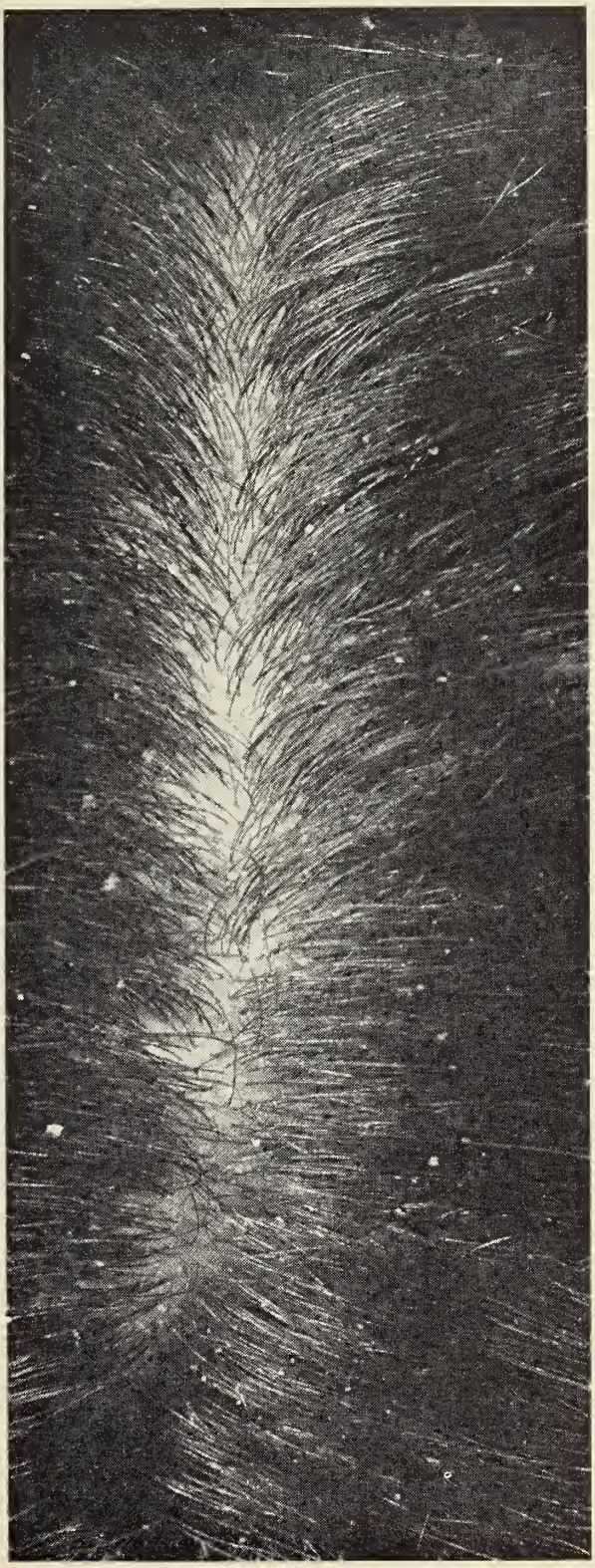
PATHOLOGICAL DISCUSSION

Dr. Mallory: This man died purely and simplyas the result of prostatic obstruction, despite his comparative youth. The story reminded me of a graduate student I had a number of years ago who shortly after he arrived impressed me as being far less bright than the average. Then I began to fancy that I smelled a slight uremic breath and referred him to Dr. Chute, who found that he had an enlarged prostate, with severe obstruction, at the age of forty-three years. Following a transurethral resection his mentality improved considerably.

The prostate in the case under discussion was symmetrically enlarged, and the bladder was enormously hypertrophied, the muscular wall measuring over 1 cm. in thickness. There were numerous incipient diverticula but none that penetrated through the entire thickness of the bladder wall. Each ureter measured 1.5 cm. in circumference. The kidneys were small. The pelves were grossly dilated, but the cortex of each kidney ranged from 0 to at most 3 mm. in thickness. All traces of pyramids had disappeared.

Microscopical sections of the kidney showed almost complete atrophy of the tubules, persistent glomeruli and minimum interstitial inflammation — a characteristic picture of hydronephrotic atrophy. The lungs at autopsy weighed 800 gm., which indicates about as little pulmonary edema as one can hope for in a patient dying in uremia. The heart was within normal limits, and we found nothing wrong with it.





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THE *President's* PAGE

BRICKER AMENDMENT

THE DAY THIS IS WRITTEN THE ASSOCIATED PRESS ANNOUNCED THE SCANT DEFEAT OF THE MUCH AMENDED BRICKER AMENDMENT IN THE U. S. SENATE. WITH THE ROLL CALL 60-30 IN FAVOR, SENATOR KILGORE "DASHED INTO THE CHAMBER TO CAST THE VOTE WHICH KILLED IT." SENATOR GOLDWATER VOTED FOR IT, SENATOR HAYDEN AGAINST.

OFFICERS OF YOUR ASSOCIATION URGED OUR SENATORS TO SUPPORT THE BRICKER AMENDMENT. SENATOR HAYDEN FROM THE OUTSET HAS REPEATEDLY AND FIRMLY STATED HE BELIEVED THE AMENDMENT UNNECESSARY, AND VOTED ACCORDING TO HIS CONVICTIONS. WE SINCERELY HOPE THOSE OPPOSED DO NOT LIVE TO REGRET THE DEFEAT OF THIS TREATY-CURBING LAW.

ANOTHER IMPORTANT BILL, ALSO SUPPORTED BY THE AMERICAN MEDICAL ASSOCIATION, HAS YET TO BE CONSIDERED. THE OUTCOME OF THE JENKINS-KEOGH BILL WILL PROBABLY DEPEND UPON THE TAX PICTURE IN MARCH AND THE INFLUENCE OF AN ELECTION YEAR. IT IS AN ATTEMPT TO FORESTALL UNIVERSAL SOCIAL SECURITY AND GREATER FURTHERANCE OF A WELFARE STATE BY ALLOWING THE SELF-EMPLOYED TO BUILD UP THEIR OWN SECURITY PROGRAMS THROUGH TAX EXEMPTION ON THE AMOUNTS SO SET ASIDE ANNUALLY. IT IS NOT A SUBSTITUTE FOR LIFE INSURANCE, BUT AN ADDED MEANS OF ESTABLISHING AN ESTATE AS WELL AS A RETIREMENT FUND, TAXABLE WHEN USED. IT SHOULD HAVE AN APPEAL TO YOUNGER PHYSICIANS ESPECIALLY. THERE IS AS YET NO OTHER MEANS BY WHICH A PHYSICIAN CAN DEPRECIATE HIS CAPITAL INVESTMENT IN AN EDUCATION WHICH FITS HIM TO EARN A LIVING OVER THE PERIOD HE IS GAINFULLY OCCUPIED.

EDWARD M. HAYDEN, M.D.
PRESIDENT
ARIZONA MEDICAL ASSOCIATION, INC.

Editorial

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Journal of
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The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.
2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. (See MEDICAL WRITING by Morris Fishbein.)
3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.
4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.
5. Submit manuscript typewritten and double-spaced.
6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.

The Editor is always ready, willing, and happy to help in any way possible.

MEDICAL EDUCATION—QUO VADIS

IN the seventy-nine medical schools in the United States approximately 27,000 undergraduates and 55,000 other medical scientists taking postgraduate work are enrolled each year. Annually more than 6,000 doctors are graduated. This is 1,000 more than a decade ago and yet not enough to supply the ever increasing demand.

The average cost of educating a young man or woman in the field of medicine has doubled in 20 years to $10,000. Tuition fees have been increased about 165% since 1940, but they pay only about one-fifth of the bill. Contributing to these staggering figures in this most expensive of all fields of higher education are the lengthy training period, complicated training techniques arising from recent scientific advances, the high ratio of teachers to students, and costly laboratory facilities.

In 1953, $10,000,000 additional to meet urgent current medical school needs and to overcome equally pressing long range medical education problems was required. Obviously deficit spending cannot continue. Equally clear is it that either the standards of medical education must be lowered or more money must be supplied. The first alternative would invite disaster to American Medicine and to the nation's health. Money must come from private or government sources, the former being preferable in the preservation of freedom of education and enterprise.

18,176 doctors contributed $1,087,375.60 to the cause in 1953 through the American Medical Education Foundation. In addition 28,307 doctors contributed approximately $1,230,000 direct to Medical schools, or through alumni funds. American Industry gave in the same period $1,367,979.89 to the National Fund for Medical Education.

Progress is being made, but it is apparent that the Medical profession has not yet recognized and accepted its responsibility toward Medical Education. During the past year only 8.89% of American doctors, and only 1.41% of Arizona doctors, were contributors to Medical Education through the Foundation. While contributions direct to Medical Schools and through alumni funds are worthy of commendation, yet money given through the American Medical Education Foundation, unless earmarked for a specific institution, is unrestricted and is distributed fairly to all Medical Schools thus helping the small as well as the large ones. All money contributed to Medical Education through AMEF is used down to the last penny for that purpose, not one cent being taken for administrative expense.

Industry and other segments of lay Society will support Medical Education financially, but only when the Medical profession encourages this support by setting the pace. — H.W.K.

Interesting TOPICS

Some of the Good Articles In Current Medical Journals

THE Recent Advances in Surgery of the Autonomic Nervous System. By Osler A. Abbott, M.D., Ass't. Professor of Clinical Surgery, Emory Univ. School of Medicine, Georgia. Maryland State Med. Jour., January, 1953. Quite a comprehensive article, about half of the January Journal being given up to this article, which was the J.M.T. Finney Lecture, before the Annual Meeting of the Medical and Chirurgical Faculty of the State of Maryland, April 30, 1952.

Infection in the Newborn Baby (The Charles West Lecture before the Royal College of Physicians of London, Nov. 11, 1952). By Alan Moncrieff, C.B.E., M.D., F.R.C.P., Prof. of Child Health, Univ. of London. British Medical Journ., Jan. 3, 1953.

Michigan State Med. Jour., January, 1953, is the annual Heart Number, with articles by Levine, and other notables, including an interesting article on Current Treatment of Rheumatic Fever, by Hecht, Nolke and Sheldon of Detroit, Mich., emphasizing the use of cortisone and corticotropin.

Indications for the Sterilization of Women. By Donnelly and Luck, Winston-Salem, N. C. North Carolina Medical Journal, January, 1953. A very excellent article, specifically referring to the legal situation in this state, but also with good discussion of the general indications and contra-indications for tubal ligation.

Treatment of Some of the More Common Diseases of the Rectum. By Spears, Ferguson and Murray, in Journ. of the American Medical Women's Association, January, 1953. Good article for general practitioners. Conditions discussed include anal fissure and radiation proctitis.

The Management of the Herniated Intervertebral Lumbar Disc. By Hegarty and Elkins, Cleveland, O. The Ohio State Medical Journal, January, 1953. They discuss seventeen prerequisites to diagnosis. They discourage the use of myelography. The paper is based on a follow up study of 258 surgically treated cases.

The Value of Bronchoscopy and Brochongraphy in the Diagnosis of Pulmonary Disease. By Herman J. Moersch, M.D., Mayo Clinic, Rochester, Minn. The Journ. of the Arkansas Medical Society. February, 1953. Discusses the indications for these procedures and cautions to be observed.

Air Pollution and Cancer of the Lung. By W. C. Hueper, M. D., Chief of the Cancerigenic Research Studies Section, National Institute of Health. In Rhode Island Medical Journal, January, 1953. Discusses different types of air pollution, including tobacco smoking, and the statistical relationship of such pollution to development of lung cancer. Interesting reading. Makes you want to hold your breath when driving behind another car, or when someone blows tobacco smoke across your face. W.W.W.

* * *

OBESITY. A very interesting Symposium on Obesity appears in the June 4, 1953 New England Journ. of Medicine. It includes five articles, as follows: Reorientation on Obesity by Pennington, Lipogenesis by Gurin, Health and Obesity by Barr, Relation of Obesity to Longevity by Dublin, and The Psychology of Overeating by Brosin.

Barr starts his article by a quotation from Leonard Williams' monograph on "Obesity;" "The unlovely condition called corpulence or obesity has been divided into three stages known respectively as the enviable, the comical, and the pitiful. Such classification is based upon a false estimate of values, for no case of obesity is enviable. Most of them are in a sense comical, and all are pitiable." He then discusses the formidable list of hazards, disabilities and discomforts associated with obesity.

Dublin states that about 1 out of 5 of the nation's adults weigh more than they should, and about 5,000,000 can be classified as obese; that is, 20 per cent above the ideal weight for the skeletal build. "From the point of view of preventive medicine and public health, overweight, because of the large number of people affected, is the leading health problem among the middle-aged and older people in this country today. At the same time, it is perhaps the one most amenable to correction. . . . Every effort, therefore, should be exerted to bring home the dangers of overweight to the people and to get them to take positive action to control their weight."



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TOPICS OF *Current Medical* INTEREST

RX., DX., AND DRS.

By GUILLERMO OSLER, M.D.

It says here (in the Journal of the Michigan State Medical Society) that a Committee from a local health group has set up a scholarship in memory of the late great Dr. Bruce Douglas of Detroit . . . We'd like to say 'wonderful', and then use the opening to refer to a similar idea which was once suggested in this column. Why don't the Pima and Maricopa Medical Societies keep their eyes open for gift funds to pay for LECTURESHIPS in honor of late, great Arizona physicians? A thousand dollars each would pay for an annual lecture for ten years in honor, for instance, of Gore, Mills, Kibler, Watson, and many others.

The SKIN OF AGED PEOPLE, especially those at bedrest, may be a trial for all concerned. Dryness, itching, scratching etc., may even supercede the major illness for attention . . . The first command is to stop regular bathing, except in necessary areas. Ban the use of soap. Apply colloidal oatmeal as a skin-cleanser, or such a trade prep, as 'Aveeno'. Consider the use of 'baby oil', or a combination of olive oil and lime water, equal parts . . . If you're definitely in trouble it's no disgrace to holler for a dermatologist, if available.

The U.C.L.A. Institute of Transportation and Traffic Engineering has just reported that you should not only check your water, oil and gas before starting on a trip, but also your PSYCHOLOGY. It may prevent accidents, the unexplainable kind . . . Everyone knows that hypoxia may be a factor. Most of us, entre nous, are quite aware that an auto-hypnosis (no pun) developes, and that it can be divided into three categories: velocitization, high-speed trance, and hypnagogic hallucinations . . . But the new smash term, which may be really smashing (pun), is the 'psychology of trip geography'. It means that one may drive too far the first day; may compare previous travel times; may drive fast or long to make schedules, etc.

Almost every journal, bulletin, and newsmagazine has published the note about the new RAPID METHOD of FINDING TUBERCLE BACILLI. Dr. Buddingh and Breuck of LSU described the injection of infectious material into an embryo yolk sac, and presto! a diagnosis in 4 days . . . Oddly the usual research leaders in that field haven't picked it up. No further reports have been made . . . It isn't jealousy, since things don't work that way. It is due to a few simple objections. There are few places which have that kind of eggs. Eggs may contain avian tubercle bacilli. Not enough time has elapsed to allow confirmation.

Do people go to sleep when you show a LANTERN SLIDE containing data vital to your medical report? Do people groan at each successive slide? Do people fail to call you a public-speaking moron because you put too much information in too small a space? . . . The use of illegible slides is a horrible fault, and horribly common. It has such a simple way of correction: Cull out all but the points you MUST make (and save the rest for publication, with the editor will take care of it); state the points clearly in a few words or figures; then TYPE them and use them WITHOUT REDUCING THEM at all, or by more than 50 per cent.

ASPIRIN POISONING has been in the medical news, usually of children. (Adults are divided into three classes: those who take ordinary amounts; those who forget to take any; and those tight souls who break the pills in half. Normal adults don't overdose) . . . Young children take aspirin which is left available. The usual amounts are a portion of a bottle (100). Emesis, ecchymoses, flush and sweating, and unconsciousness may occur. The chief hazard is to the respiratory center, and an early acidosis may be followed at some stage by alkalosis (from hyperventilation). High fluid intake (to wash out the salicylate through the kidneys), oxygen, and vitamin K are necessary for deep effects.

Before it could be analyzed to appear here (a mere 15 months) the news about VERATRUM VIRIDE FOR HYPERTENSION has been translated into a fairly wide clinical usage . . . The drug is not exactly new, but the work of Stearns and Ellis of Harvard gave it a new solid basis, not to mention respectability . . . Apparently it is effective. An infusion works more quickly and regularly than the drug by mouth . . . Lowering of the blood pressure may not coincide, or equal, the symptomatic effect . . . It is toxic like everything else in this world). It has yet to be shown that the drug effects the course of the disease . . . Almost certainly a lot of people will be given a lot of the drug, hypertension being what it is.

There has been some comment about a recent paragraph here concerning the incidence of CARCINOMA OF THE PROSTATE. It was cor-



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rect and factual . . . It is the second most common cancer in men. It was first publicized by Arnold Rich of Hopkins in 1934, when he told the American Urological Ass'n. that 28 per cent of men over 70 had it. The report has been confirmed since, as has his other observation that the majority of such men would not die of the lesion . . . The increasing span of life may change the prospects — but surgery and endocrine therapy may help to counterbalance. C'est la vie.

Two of the worst HORRORS OF TUBERCULOSIS are lessening in frequency (miliary and meningitis), but new methods should be of huge help for the cases which still occur. Des Autels and Pfuetze of Chicago have shown that the SURVIVAL RATES vary with the therapy 'Pure' miliary responds 33 per cent to streptomycin, 83 per cent to SM and PAS, and even better when isoniazid is added . . . Those with 'pure' TB meningitis survive at the rate of 13.6 per cent treated by SM, 69 per cent by SM and PAS . . . Combined miliary and meningitis cases have a 10 per cent change to survive with SM alone, 71 per cent with SM and PAS, and the results when isoniazid is added are nearing 100 per cent survival.

The CLEVEREST ADVERTISING TRICK which concerns Arizona, and (?) medicine, and flying has just been sent out to doctors all over the United States. . . . It consists of a sack attached to an address tag (sure-fire current way to get people to open the package, they say). .You loosen the draw-string and inside the bag is a pill-box. Open the pill-box and there is a huge 'horse-capsule'. Inside the capsule is a rolled up notice that TWA is prescribing a quickie vacation trip as a cure for weary bones and jangled nerves . . . Very clever, and we say that the FDA can't object to the medication.

If you're struggling along, barely able to figure out the Rh FACTOR difficulties to which humans are heir, you may not welcome this canine item . . . A dentist friend of ours has a bitch (Boxer, 3 years old) who/which is now unable to have puppies. She was sterilized, to avoid the complications occurring whenever gravid, due to being Rh negative, (with pups having erythroblasosis if they lived, we presume) . . . It would be interesting to know how long it was after the work of Wiener, et. al., that some obstetrician (or hematologist) for dogs figured out the Rh angle for his practice . . . Or did the vets know it first?

The Georgia Medical Journal has published an article about "PICK'S DISEASE", and called it 'Take Your Pick' . . . The reason is one which the editor of a medical textbook or dictionary might know, but some people don't: .There is not one, not two, but FOUR diseases known by the name, and all are different Picks. . . . A degeneration of the brain was described by Arnold Pick. A painless progressive red skin (erythromelia) was noted by F. J. Pick. Polyserositis is the (Friedel) Pick's disease. Ludwig Pick is joined with Niemann in the label applied to lipoid histiocytosis.

A group at Cook County Hospital reported a four-year study which was made to see whether the use of MINERAL OIL as a laxative interfered with the absorption of VITAMIN A. They found that oil given at mealtimes would cause a slightly low vitamin A level in the blood, but if it was given at nighttime it was harmless unless given in large doses . . . This report has been circularized, apparently by Mineral Oil People, in a clever way. A doctor in Chicago named William Fishbein sent it out as a simple office letter. How many minutes does it take you to remember whether this is the AMA-JAMA Fishbein? (Whose first name spelled backwards is SIRROM).

A 'COLD' IS A 'COLD' IS A 'COLD', even at Mayo Clinic . . . The general hypothesis is a modified title from the late Gertrude Stein. Evidence to support it comes from an article by Chris Parnall Jr., in the far-away Jour. Louisiana Med. Soc. The thesis holds true in Rochester, New York, or Minnesota. . . . There is no specific therapy. Patients won't take reassurance as the only form of treatment. Bedrest is best but usually not practicable. A fever of plus 100° means more than a 'cold'. If a WBC is elevated, it indicates infection, and the antibiotics. A sulfa may be used first, but penicillin next if no result in 24 hours. (Ask the patient about allergy to penicillin before using it). Use the hospital if there is no response in another 24 hours, or if pneumonia is known to be present. Take an x-ray of the chest . . . If the WBC is low, a virus is a likely cause. Aureo, terra, or erythromycin are then the logical drugs . . . SPECIAL NOTE— Always get a follow-up film AFTER therapy; you may miss a case of TB. (You may miss it, says G. Osler, if you dont consider TB BEFORE therapy).

NOTICE

ALL CONTRIBUTORS OF ARIZONA MEDICINE SHOULD HAVE THEIR MATERIAL IN THE JOURNAL OFFICE NOT LATER THAN THE 10th OF THE MONTH PRIOR TO PUBLICATION IN ORDER TO HAVE ARIZONA MEDICINE REACH ITS READERS ON OR BEFORE THE 10th OF THE MONTH

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ARIZONA *Pharmaceutical* PAGE

"PHARMACY'S PLACE"

THE INTERRELATED and organized human activity which constitutes what we call "society" is based on the assumption that every one of the groups supposed to meet some special need has developed into its job as "the fittest" for just this kind of task and has remained the fittest by continuous adaptation to changes in general and/or particular circumstances. This holds especially true for the activities of the groups commonly called professions, requiring specialized knowledge and carrying certain definite responsibilities. For them their "to be or not to be" depends entirely on their part in, on their necessity to society.

The profession of pharmacy has developed into its job of necessity and has remained in it by its adaptability. History shows that pharmacy represents one of the early results of the tendency towards deliberate specialization which is one of the most characteristic features of modern society. It has not only held a legitimate place in, but has contributed to the development of the society.

It was the awakening of a social conscience on the part of those in power in connection with scientific and technical progress that, about 700 years ago, caused the beginning of the legal separation of pharmacy from medicine in the Western World. The importance of professional pharmacy for public welfare made itself felt very soon quite generally and has been given the recognition of the governments all over the world. As a matter of fact, in some measure the existence, non-existence and kind of legal regulation of the practice of pharmacy of the degree to and the way in which, in the country concerned, Western civilization has developed.

Now and again has the part of pharmacy in the protection of public health been confirmed authoritatively. When on December 16, 1617, shortly before the issuance of the first London pharmacopoeia, King James I of England granted the London apothecaries a charter creating the "Society of the Art and Mystery of the Apothecaries of London."

It has been the necessity to warrant the adequacy of drugs and their preparation which in all countries has caused the issuance or adoption of drug standards and the protection of a group of experts who could be entrusted with the responsibilities concerned. As early as about 1450 the duty of the apothecary to act as a controlling agent as to technical deficiencies and dangerous mistakes in medical prescriptions has been stated by the Italian physician Saladin de Asculo as follows:

"If some young and inexperienced physician prescribes revolting or disgusting drugs for some patient, then the apothecary shall not permit this to be prepared, but shall advise the physician to prescribe more palatable and better ones lest possibly the stomach of the sick may be upset by the revolting drugs."

There can hardly be any more convincing testimony to the necessity of the separation of the professions of pharmacy and medicine as well as of their close and trustful cooperation. The more the governmental measures expanded for the protection of the public from the use of adulterated or otherwise dangerous drugs, the more the pharmacists have become an indispensable link in this fight. With their distribution all over the country, their trained and reliable personnel and their traditional part in public welfare, the pharmacies are the backbone of our modern antinarcotic legislation.

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CANCER

Edward H. Bregman, M.D.
Phoenix, Arizona

THE FACILITIES for the treatment of cancer and allied diseases in Arizona are somewhat limited. In general, the larger cities such as Tucson and Phoenix are the only places where adequate surgery radium and x-ray therapy can be obtained. This often causes hardship to the patient who has a long distance to travel to the above centers.

In Phoenix, Memorial Hospital has a cancer detection center which is approved by the American College of Surgeons. This clinic has run successfully for several years, but statistically the percentage yield of carcinoma is rather low. This reduplicates the experience encountered nationally. Another difficulty that is encountered in detection centers is that private patients filter into the clinics without consent of their own physicians. This causes embarrassment. Careful screening of patients is an absolute necessity.

The first line of defense in the detection of early carcinoma is the general practitioner. With adequate educational seminars considerable interest can be stimulated so that we all may become more cognizant of the early signs of carcinoma and other tumors.

Under the direction of Dr. Charles Kalil, the Maricopa County Tumor Clinic has been reactivated. At present, Dr. W. A. Brewer is the chairman of the clinic board. Participation is open to all physicians. This clinic has proven beneficial to the patient and the medical participants as well. The Society of Arizona Pathologists intend starting a tumor registry in the near future.

The Pima County Hospital has an active Tumor Clinic that has functioned satisfactorily since its beginning.

Out Patient Tumor Clinic may be started at St. Joseph's Hospital and Good Samaritan Hospital in Phoenix as well.

One of the greatest problems we have encountered is the transient indigent patients who suffer from malignancy. The Arizona Division of the American Cancer Society is willing to help these people. First, a careful screening is made regarding the financial and social status of the individual concerned. Secondly, their request is reviewed by physician members of the cancer society. In order to more equitably distribute the funds of the society throughout the state, no more than $75.00 is contributed towards the care of any individual case. Practically every physician contacted has offered their services free. Many radiologists have treated these patients without cost to the cancer society.

The Arizona Cancer Society is grateful to the physicians of Arizona, because without their generous help, the funds for patient care would be exhausted quickly.

Rather than nurture any form of socialized medicine no matter how modified it may be, an educational program both for the physician and laity is the society's theme. The successful cancer seminars have brought prominence to the participants far beyond Arizona. Many of our physicians have been kind enough to address women's clubs, churches, schools and service clubs. Films are shown which educate the public to the dangers of new growths. Already, earlier tumor cases are being found by practitioners.

This project has another desirable effect. For the past few years, doctors have been criticized severely for our lack of interest in public welfare projects. The participation of our local physicians in programs like the one above outlined has done a great deal to aid in breaking down the barrier created by this criticism.

This writer was somewhat flabbergasted when he found out that election to the chairmanship of the sub-committee of cancer of the Professional Board of Arizona Medical Association automatically made one the executive chairman of the Arizona Division of the American Cancer Society. With great misgiving, I reviewed the efforts of my predecessors. Their work was admirable and the time they gave to this project entailed great self sacrifice. Among the leaders were: Dr. Jesse D. Hamer, Dr. Clarence G. Salsbury, Dr. Henry G. Williams, Dr. Royal W. Rudolph, Dr. Douglas D. Gain, Dr. Preston T. Brown, Dr. Arthur J. Present, Dr. E. Payne Palmer, Sr., and Mrs. Ruth Hartgraves.

We felt that the efforts of the society should be more generalized. Therefore, with the aid of Mrs. Mildred May, president of the society, we decided to embark on a statewide educational program. The preliminary phase of our efforts culminated in the well received Cancer Seminar. In order to go on with our future program, we will need the efforts of more physicians; men who are willing to make some minor sacrifices for the future success of the combined efforts of the cancer society and the Arizona Medical Association. Some of these men who have already assisted a great deal are: Dr. Thomas H. Bate, Dr. James D. Barger, Dr. Reed D. Shupe, Dr. Jesse D. Hamer, Dr. D. W. Melick and Mr. Julian DeVries.

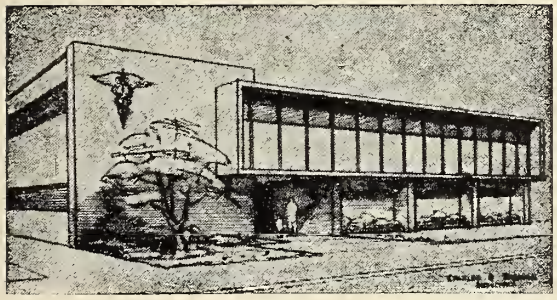
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Organization Page

Medical Organizations and Lay Medical Groups are invited to submit news for this page to Norman A. Ross, M.D., Professional Building, Phoenix, Arizona.

On this page will be reported activities of lay and medical organizations that are a part of the physicians' citizenship responsibility.

THE ARIZONA SOCIETY FOR CRIPPLED CHILDREN AND ADULTS, INCORPORATED, 207 Arizona Title Building, Phoenix:



The Easter Seal Fund Raising Drive is state-wide and begins March 18 and extends through April 18, 1954. Ninety two percent of the funds raised from this drive remain in our state. The Samuel Gompers Memorial Clinic in Phoenix with its facilities for the orthopedically handicapped pre-school and primary children, with speech therapy and parent education groups, is available to any resident of the state. However, maintenance is not provided. This clinic serves 75 youngsters, two of which at the present time do not come from Maricopa County. The regional clinics, of which six are programmed from March to June, will be directed by the local chapter. The regional clinic in March will be in Nogales on March 14, 1954.

THE NATIONAL FOUNDATION FOR INFANTILE PARALYSIS, 120 Broadway, New York 5, New York, has released the fact that a limited number of postdoctoral fellowships in physical medicine are available. There is also a release which is available through the national or state agency, 39 West Adams, Phoenix, Arizona, regarding the means of producing polio vaccine, and announcing the availability of such to state public health departments. The shipments will be made in the last week of March.

A third release catalogues the research grants and monies assigned to prevention and improvement of methods of treatment to medical schools. The distribution of monies since 1938 for these two projects is $53,000,000 plus for the first and $174,000,000 for the latter.

AMERICAN CANCER SOCIETY, INC., ARIZONA DIVISION, 1429 North 1st Street, Phoenix, Arizona:

The Officers and Directors of the ARIZONA DIVISION, of the American Cancer Society, would like to express their appreciation of the enthusiastic reception which the members of the Arizona Medical Association gave to our Second Annual CANCER SEMINAR.

ARIZONA TUBERCULOSIS AND HEALTH ASSOCIATION, 1329 North 2nd Street, Phoenix, Arizona:

The date for the annual meeting of this organization are April 3 and 4, 1954. Meeting place Westward Ho Hotel, Phoenix.

AMERICAN RED CROSS, PACIFIC AREA OFFICE, 1550 Sutter Street, San Francisco 1, California:

The month of March presents innumerable local events associated with the annual drive for membership. This agency is organized by counties in Arizona.

THE ARIZONA HEART ASSOCIATION, P. O. Box 2688, Phoenix, Arizona.



During this month this association will complete final organization procedure and become a full-fledged state agency. County organizations are now strong and representative.

Of practical interest are such booklets as "Diagnosis of Congenital Cardiac Defects in General Practice," and "Food for Your Heart," a Manual for Patient and Physician. These and many other valuable articles and booklets are available through this agency for the physician and for his distribution.

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Red Cross Gets Salaried President

A top-level reorganization of the National Red Cross creates a new salaried position of president at $30,000 per year, but does not affect RC medical programs. The new president is Ellsworth Bunker, former industrialist and former U. S. ambassador to Italy and Argentina. He will take over full administrative responsibility, relieving E. Roland Harriman, who has served without pay as president and board chairman since 1950. Mr. Harriman remains as chairman of the board, which office will continue to be filled by appointment by the President of the United States.

ISAAC L. GARRISON, M.D.

THE FOLLOWING Resolution was passed unanimously by the Maricopa County Medical Society at the December 7th meeting:

WHEREAS, our Society was deeply grieved to learn death had taken Doctor Isaac L. Garrison from his family, friends, and colleagues, and

WHEREAS, Doctor Garrison will be forever remembered for his generous gift of his medical library to the Maricopa County General Hospital and the Maricopa County Medical Society, and

WHEREAS, in his lifetime he constantly served others—first as a teacher, in later years a physician, and

WHEREAS, as a physician he delivered two generations of Phoenix babies and maintained the highest ethical standards of the medical profession, making himself respected and loved by all those who knew him, and

WHEREAS, he upheld his patriotic beliefs through action in France during World War I, NOW THEREFORE, do we, the members of the Maricopa County Medical Society, hereby resolve that this Society spread upon its minutes and make known to the family of Isaac L. Garrison its enduring respect of his personal character and professional proficiency, its deep sense of grief at his untimely death.

GEORGE B. IRVINE, M.D.

THE FOLLOWING resolution was passed unanimously by the Maricopa County Medical Society at the meeting February 1, 1954:

WHEREAS, sudden death has claimed the life of Doctor George Burgess Irvine, separating him from his family, friends and colleagues, and

WHEREAS, Doctor Irvine was a member of the Maricopa County Medical Society for 20 years, serving the Society faithfully and continually striving to uphold and raise the standards of the medical profession, and

WHEREAS, despite ill health, he developed an extensive general practice, specializing in pediatrics, and won the respect and admiration of all the patients he served, and

WHEREAS, he upheld his patriotic beliefs through action with the Army Medical Corps in France during World War I and through his membership in the William Bloys Post of the American Legion at Tempe, and

WHEREAS, he was a civic leader who unselfishly devoted his time to helping others both as an individual and as a member of various groups such as the Tempe Masonic Lodge, the El Zaribah Shrine, the Tempe Chamber of Commerce, Tempe Rotary Club and Tempe Congregational Church, and

WHEREAS, he was taken from this world before he could complete the outstanding work he had begun in medicine.

NOW THEREFORE, do we the members of the Maricopa County Medical Society, hereby resolve that this Society spread upon its minutes and make known to the family of George Burgess Irvine its everlasting respect and its deep sense of grief at his unexpected death.

A. G. RICE, M.D.

THE FOLLOWING Resolution was passed unanimously by the Maricopa County Medical Society at the December 7th meeting:

WHEREAS, a tragic accident has claimed the life of Doctor A. G. Rice, separating him from his family, friends, and colleagues, and

WHEREAS, Doctor Rice was known to all as a quiet, reserved, and thoughtful individual whose every thought was devoted to helping others, both in his professional and private life, and

WHEREAS, he continually endeavored to uphold and raise the ethical standards of the medical profession, and

WHEREAS, he was taken from his world before he could complete the fine work he had begun in medicine,

NOW THEREFORE, do we, the members of the Maricopa County Medical Society, hereby resolve that this Society spread upon its minutes and make known to the family of A. G. Rice its everlasting respect, and its deep sense of grief at his unexpected death.

CANCER SEMINAR OUTSTANDING

Edward H. Bregman, M.D., Chairman, Sub-Committee of Cancer, Professional Board. Executive Chairman, Arizona Division, American Cancer Society.

THE second annual cancer seminar, jointly sponsored by The Arizona Division of the American Cancer Society and the Arizona Medical Association, proved to be an unqualified success. The meetings were held at Paradise Inn on January 14th, 15th and 16th. 425 registrants, including physicians from New York, New Jersey, Colorado, Montana, California, Wisconsin, Texas, New Mexico, Pennsylvania and Indiana, provided an attentive audience for the excellent array of speakers.

The meeting had a twofold purpose. Firstly, to bring the newer advances in diagnosis and treatment of cancer and allied diseases to the local physicians. Secondly, to make the medical world more cognizant of the high level of medicine practised in Arizona. No long is Arizona considered a "whistle stop" medically between Chicago and Los Angeles. Dr. Joe V. Meigs stated that he was very impressed by the continued interest and intelligent questions of the Arizona physicians. To quote Dr. Anthony Curreri, Associate Professor of Surgery of the University of Wisconsin:—"The program committee and its moderators are to be highly commended for providing an outstanding program, and integrating all facets of the subject in such a manner that the general practitioner and specialist alike received academic and practical information. Moreover, the interest of the physicians was manifested by their continued attendance throughout the day, and their sustained active participation in the discussion periods. It is unheard of in medical circles to observe one third to one half of the medical profession of a state attending such a meeting."

The speakers will long be remembered for their wit, erudition and humility. Drs. Swenson, Bailey and Meigs were kind enough to see patients who presented problems to local physicians. Julian DeVries is to be complimented for the wide coverage by the press, radio and television. Drs. Meigs, Gurdjian, Bailey, Bate, Cameron and Bregman appeared on local television stations. Judging from the numerous letters received from the participants and the laity, a great boost was given to physician and patient relationship.

Among the highlights of the seminar was the stimulating panel discussion of carcinoma of the cervix conducted by Dr. Preston T. Brown of Phoenix. The panel members were Dr. O. H. Brines, Dr. L. H. Garland, and Dr. Joe V. Meigs. Dr. Meigs clearly explained the importance of the "RS and RR" sensitivity test of cervical smears. Drs. Aebersold, Pendergrass and Garland stated that in general, isotope therapy has been disappointing. They stressed the importance of isotopes in physiological studies. They felt that isotope programs should be carried out in higher institutions such as university and medical centers where facilities are provided for the proper disposal of radioactive wastes and where physicists are available at all times. The "gentle" treatment of leukemia patients and the value of nitrogen mustard in re-sensitizing a patient who has become refractory to roentgen therapy was stressed.

The excellent presentation of Drs. Bailey, Gurdjian, Swenson and Curreri will not be forgotten. The moderators, namely Drs. Dermont Melick, Preston Brown, John Eisenbeiss, Ralph Fuller, Douglas Gain, John Green, Edward Hayden, Hugh Thompson and O. O. Williams, deserve praise for the smooth and efficient way they conducted their respective panels.

The gears are in operation for the third annual seminar. Dr. Charles Cameron, Medical and Scientific Director of the American Cancer Society, has promised to support our new effort wholeheartedly with the resources of the Society, because this meeting is assuming national importance.

The last seminar was an excellent demonstration of the feasibility of a volunteer health agency, and the medical profession cooperating to the eventual benefit of the community and society.

My heartfelt thanks go out to Mrs. Mildred F. May, Dr. James Barger, Dr. Thomas Bate, Dr. Reed Shupe and Dr. Jesse Hamer for their prodigious work in making a dream come true.

SOCIETY OF MEDICAL TECHNOLOGISTS CONVENTION

The 22nd annual National Convention of the American Society of Medical Technologists will be held at Miami Beach, Florida, June 13-17, 1954. The co-headquarters Hotels are the Delano and DiLido.



View of the new addition to Good Samaritan Hospital.

GOOD SAMARITAN HOSPITAL

TODAY, in American civilization, health occupies a high place among accepted social values. At Good Samaritan Hospital, this state of well being is constantly sought for all patients by one of the most efficient and highly trained medical staffs in the country. Service and skill are presented to all patients on a twenty-four hour basis, daily. Proof that the medical staff do realize this goal and successfully accomplish their objectives are in the following statistics: At Good Samaritan or "Good Sam" as the hospital is often affectionately called, there are 230 beds. During the past year, 15,038 patients have been admitted for treatment and 14,759 have been treated, helped or cured, and finally dismissed from the hospital. Comparison with other hospital records show this to be an excellent and out-standing achievement. In fact, it tops most records in the area, and of many hospitals in the country. There's no secret to this amazing statement. However, a simple explanation will give the reason. At Good Samaritan Hospital there is splendid evidence of co-ordinated team-work throughout the staff which consists of Administrative personnel, Doctors, nurses, technicians and non-professional workers. This smooth-runing co-operation makes for efficiency, service and top-quality care and treatment for every patient who enters Good Samaritan Hospital, and it is also reflected in the courteous, interested relations between patient and staff.

With the addition of the new wing which was officially opened to the public on January 31, 1954, it will mean a bed-capacity of 100 more, bringing the total bed-capacity to 330 which will be available to the community of Phoenix. This is a marked difference and increase from the modest little hospital which had its beginning back in 1910!

Yes, 1910 was the year when the hospital we now know as Good Samaritan first saw the light of day. It was called the Deaconess Hospital and was founded by Miss Lulu Clifton (now over eighty years of age and still residing in Phoenix) and Miss Marilla Williams who is still active in the nursing profession and who lives and works in California. In 1913 there was formal organization by the first Board of Trustees, headed by Mr. H. B. Wilkinson, Chairman of the Board. Mr. Wilkinson is now 83 and living in Phoenix. In 1919, Miss Marilla Williams presented her annual report of the Deaconess Hospital in which she stated that 636 patients had been cared for that year. Mr. J. O. Sexson was named Superintendent of Deaconess Hospital in 1920 and in March of 1928, the name was officially changed to Good Samaritan Hospital. In 1931, the new Good Samaritan Hospital on East McDowell Road was opened for inspection on January 24th.

Mr. Guy M. Hanner joined the staff at Good Samaritan Hospital as assistant Superintendent in 1945 under Mr. J. O. Sexson. Mr. Sexson was appointed Chairman of the Hospital Board of Trustees in 1949 and at that time Mr. Hanner was named Administrator. Mr. J. O. Sexson passed away on June 19th, 1953 and in August of that year, Mr. Truman Yates was appointed assistant Administrator. The annual report for the year of 1953 showed that the total number of patients cared for was 15,038.

On Sunday, January 31, 1954, after a series of strike and other set-backs, Good Samaritan proudly presented their "Open House" for the community of Phoenix. Open for inspection was the handsome new wing and at 4 p.m. the beautiful Vosburgh Chapel was dedicated by Governor Howard Pyle and his father, Reverend T. M. Pyle of Buckeye, Arizona. The ser-

vice was broadcast over Station KTAR, the NBC network.

The newly-formed Women's Auxiliary at Good Samaritan Hospital known as "Good Samaritans" acted as hostesses and escorts for the 2000 visitors who came to see the progress and accomplishments that had been realized at the hospital. Tours were conducted through the new wing, and the lovely pastel colored rooms, tastefully furnished with modern furniture, venetian blinds, private phones, individually controlled oxygen units and air-conditioning were shown to the visitors. The Chapel was on view until 4 p.m. at which time the dedication service took place. Mr. and Mrs. C. O. Vosburgh gave the Chapel to Good Samaritan at a cost of $40,000, in gratitude for good service which they had received. The "tours" included a trip through "Surgery" where many new pieces of equipment were on display and the impressive costs were shown and the functions of the different apparatus were explained.

Mr. Guy M. Hanner has stated that he is very grateful to all who helped make this progress a realization and he hopes that Good Samaritan may continue to serve the community with the best possible medical care at all times. The staff at Good Samaritan join with their "chief" in this hope.

VACCINIA IMMUNE GAMMA GLOBULIN AVAILABLE

This letter is deemed sufficiently important that we publish it in its entirety. It is self-explanatory. — Ed.

UNIVERSITY OF CALIFORNIA MEDICAL CENTER
San Francisco 22, California

University of California Hospital

January 8, 1954

Re: Vaccinia Immune Gamma Globulin

Dear Doctor:

We believe that vaccinia immune gamma globulin has an important place in the prevention and therapy of serious complications of smallpox vaccination and in the prevention of smallpox in the exposed susceptible contacts.

We want to use this circular letter addressed to teachers of Public Health, chiefs of service of contagion hospitals, pediatricians and Public Health officers, in order to establish a good number of contacts throughout the country with physicians who might be apt to see such complications of smallpox vaccination. These complications are, in the main:

1. Generalized vaccinia
2. Eczema vaccinatum
3. Progressive vaccinia (failure to produce specific antibodies) or vaccinia necrosum.

It is our belief that three or four such complications might be expected in any large city per year and that between 20-60 per cent of them are fatal, despite intensive fluid and antibiotic therapy. It is clear that in many of these complications the doctor feels directly involved since his judgment in vaccinating the child in the first place is open to question whenever serious complications occur.

Vaccinia immune gamma globulin is a solution of the globulin component of human blood collected from volunteer donors of the Armed Services who have been successfully vaccinated against smallpox from 4-8 weeks prior to this blood donation. We found their neutralizing antibody titers to be maximal at that time. We have tested this material in India for the specific prevention of smallpox in exposed susceptible family contacts of smallpox cases. Our experience indicates that this material is effective in preventing the disease under such circumstances. Our clinical experience in the prevention and treatment of serious complications of smallpox vaccination has been more limited but is promising.

One purpose of this letter is to invite others to contact us by telephone or telegram at the earliest possible moment when such cases are encountered in clinical practice, in contagion hospitals, in teaching centers, or in Health Department Well Baby Clinics. Upon such contact we will ship, free of charge, by Air Express, the required amount of vaccinia immune gamma globulin for early use. There is, at present, not enough material available to allow us to send vaccinia immune gamma globulin to Health Departments for storage.

Dosage:

1. Therapeutic dosage in the treatment of early cases of serious complications of smallpox vaccination: 0.3 cc./lb. intramuscularly. When

the dose is greater than 10 cc. it may be divided and given at separate sites to reduce the trauma of the injection.

2. Prophylaxis: The exact dose remains undetermined. 0.03 cc./lb. is probably the minimal effective dose. Doses of 0.06 cc./lb. to 0.12 cc./lb. would probably give more effective protection. This material should be given as early as possible after exposure to a case of smallpox and should *follow* smallpox revaccination (given in at least two, and preferably three insertions on the arm) by 12-24 hours. The prophylactic use of this material in vaccination would be limited to children with eczema, where a sibling is being vaccinated and household contact could be expected. A child with eczema should never be vaccinated, *regardless* of whether his lesions are dry or wet. Our present experience indicates that this material has therapeutic value even when the disease is in its 3rd or 4th day and it can generally be expected that no further lesions will crop out and that the existing lesions will involute quickly.

It is our hope that this letter will lead to wider knowledge of the availability of this special material in order to add another therapeutic tool to our handling of illnesses caused by smallpox vaccination. Telegraphic or telephone request should be addressed to C. Henry Kempe, M.D., Department of Pediatrics, University of California Hospital, San Francisco 22, California, MOntrose 4-3600, Extension 371. If calls arrive at night time, the University of California Hospital operator will notify one of the laboratory staff at one of the following three telephone numbers.

1. C. Henry Kempe, M.D., PLaza 5-3024
2. Mary Jean Morse—DIamond 4-9375
3. Melvin Lee—BErkeley 7-6610-R

Sincerely yours,
C. Henry Kempe, M.D.
Department of Pediatrics

CHK:ss

MEDICAL ASPECTS OF HOUSEWORK

A very interesting and very pertinent series of articles appear in the Journal of the American Medical Women's Association for February, 1953, on the above subject. There is a symposium from Austria, France, Italy and Finland; then an article on "The Psychosomatic Aspect of Housework,—Report from France." A later issue of this Journal will carry articles on "Orthopedic Disabilities of Housewives" and "The Cardiac Housewife." Also there will be reports from Italy and Norway. This series of articles is being prepared by the women doctors of various nations, but should prove of great interest to all practitioners who have to deal with the physical, psychic, and emotional ills of housewives and mothers, which arise out of their home responsibilities. — W.W.W.

SANATORIUM BOUGHT BY DR. O. L. BENDHEIM

Dr. Otto L. Bendheim, has announced his acquisition of the Catalina property, 5055 N. 34th St.

The name of the establishment has been changed to Camelback Sanatorium. Only neurological and psychiatric cases will be treated.

Sanatorium is a project of the recently established Phoenix Institute of Neurology and Psychiatry which is patterned after the Institute of Living in Hartford, Conn., and the Las Encinas sanatorium in Pasadena, California.

The sanatorium and the institute will be controlled by a board of directors of which Dr. Bendheim is president. Other board members are Dr. Robert L. Beal, Dr. Edward Blank, Dr. Richard E. H. Duisberg, Dr. Frank Dunn, and Dr. William Bede McGrath, Phoenix psychiatrists, and Dr. Lindsay Beaton and Dr. Charles P. Neumann, Tucson psychiatrists.

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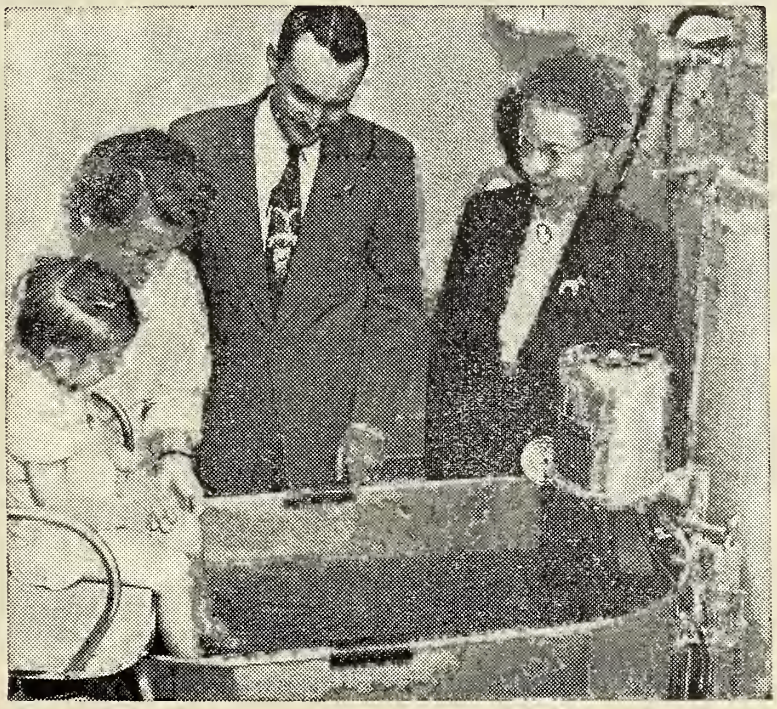
Clifford S. Babcock

Scottsdale, Ariz. WH 5-6880

WHIRLPOOL DONATED TO MEMORIAL HOSPITAL POLIO WING

Odd Fellows and Rebekahs of Arizona, in a joint project of continuing aid to polio victims, have presented a therapeutic whirlpool to Memorial Hospital in Phoenix, polio treatment center for central and northern Arizona.

Previously the Odd Fellows and Rebekahs presented a rocking bed, used as an aid to breathing, to Memorial Hospital, and a station wagon to the Crippled Children's Home in Tucson.



Charles F. Younger, Buckeye, Grand Master of Odd Fellows of Arizona; and Mrs. Eldora Curry, Casa Grande, President of Rebekah Assembly of Arizona, look on as little Barbara Tucker, polio patient from Mesa, tries the whirlpool with the assistance of Memorial's physical therapist Gladys DuBon.

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San Marcos Hotel, Chandler, Arizona

ANNUAL MEDICAL CONVENTION HELD AT SAN MARCOS HOTEL CHANDLER, ARIZONA

HAVE you ever had a YEN to act like a winter visitor in your own State? I know I have and now we are going to get the chance. The State Convention is being held this year at the lovely San Marcos Hotel, in Chandler, Arizona, from April 25th through April 28th. For four wonderful days you can play at being a visitor to Arizona in the Valley of the Sun, with all the fine resources of a Resort Hotel at your command — and best of all — at a fraction of the cost. There's a golf course, swimming-pool, beautiful shops, excellent food and, needless to say, fine company.

Also on the 27th and 28th of April, the General Sessions of the Medical Auxiliary meeting will be held. The first day there will be a luncheon at the San Marcos followed by the meeting which will end in plenty of time for you to relax at the pool or get ready for that big evening date with your husband and friends. If your husband will be tied up in Committee or special meetings for dinner and the evening we plan to have a DUTCH TREAT evening for the ladies and we quarantee they will have fun too.

The second day there will be a Brunch at the Arizona Country Club during which beautiful models from Goldwater's will show us the latest Spring fashions. The following meeting will feature the installation of the new officers by our National Representative, Mrs. Jesse D. Hamer and the presentation of her new Board by Mrs. Brick Storts. This meeting, too, will close early enough for you to dash over to the enchanting town of Scottsdale to pick up some bargains at their post-season sales, then hurry back to the San Marcos to put on your very prettiest for the gala evening at the President's Ball.

Because it is my Convention, I will not be as free to enjoy all these things as can most of you, for I shall feel responsible if you do not enjoy every minute of your stay. But I will enjoy meeting all of you whom I have had the pleasure of seeing throughout the year in your own meetings and getting to know those of you who have come to Convention for the first time. It is your Convention too, for it is you who have done the splendid work that will show up in the reports of the State and County officers and I know you will be as proud and happy over the fine record of progress we have made, as I.

Until I greet you at Convention, I am always sincerely

Your President
Rowena E. Enfield
Phoenix, Arizona

PROGRAM

MONDAY, APRIL 26

10:00 a.m. to 4 p.m. Registration

12:00 p.m. Student Nurse Loan committee luncheon and meeting. Chairman Mrs. Donald A. Polson, Phoenix.

2:00 p.m. School of Instruction for county presidents, presidents-elect, and program chairman. Chairman Mrs. Charles S. Powell, first vice president, Yuma.

3:00 p.m. Nominating Committee meeting. Chairman, Mrs. Royal W. Rudolph, Tucson.

6:00 p.m. Board of Directors dinner

TUESDAY, APRIL 27

10:00 a.m. to 11 p.m. Registration

12:00 p.m. Luncheon, San Marcos

1:00 p.m. Formal Opening Session.
Guest Speaker—Mrs. Joy Lewellen (Topic: Gamma Globulin)

2:00 p.m. to 4:00 p.m. Registration.

6:30 p.m. Dutch Treat dinner

WEDNESDAY, APRIL 28

10:30 a.m. Brunch—Arizona Country Club

1:00 p.m. Formal Opening Session, Guest Speaker—Mrs. Jesse O. Hamer, National Auxiliary Representative
Style Show by Goldwater's
General Session
Board of Directors meeting

6:00 p.m. to 7:45 p.m. Social Hour preceding President's Dinner Dance

MARICOPA MENTAL HEALTH ASSOCIATION

DURING the past several years, Phoenix has been without mental health service. In September 1948, the Phoenix Mental Health Center, supported by funds from the United States Public Health Service, was created. This excellent, but limited service, was available for approximately three and one-half years, and during that time welfare agencies, schools, parents, Juvenile Court and others consulted with members of the staff and referred children and parents to the Center for help. It served a real need in our community. But when in June 1952, the U. S. Public Health Service found it necessary to discontinue the service, the lay advisory committee of the Center decided that the community was not prepared to continue the service on either a private or public basis.

Now, nearly two years later, at the request of the Community Council of Phoenix, a committee headed by Rabbi A. L. Krohn and made up of representatives of the Maricopa County Medical Society, Department of County Welfare, Social Service Agencies, Juvenile Court, Junior League, P.T.A., and other educational and community service organizations was asked to investigate the need and possibility of developing a mental health organization in Maricopa County.

Investigation revealed a real need for a mental health group. As soon as its organization was completed, Doctor Otto Bendheim, chairman of the Maricopa County Medical Society's psychiatric section urged that a child guidance clinic be made the group's first objective. A county-wide survey of family service, schools and welfare organizations indicated that there were over 300 children in need of immediate psychiatric care. Approval was secured from the membership to establish a child guidance clinic, funds were secured, and the clinic will open its doors on March 1, 1954. A well-qualified child psychiatrist will head the staff which will include a trained psychiatric social worker.

The local psychiatrists and psychologists have volunteered their services to the clinic without charge. The clinic will be located in quarters provided by the Maricopa County Board of Supervisors.

Mrs. John A. Eisenbeiss,
Phoenix, Arizona

A NEW COMMITTEE— MENTAL HEALTH

FROM experience gained during World War II, our doctors saw a need for a closer liaison between psychiatry and general medicine. When the House of Delegates of the A.M.A. met in June 1951 a standing committee on Mental

Health was established. The committee did not meet officially until March 27, 1952.

Auxiliary members all over the country manifested such an interest in Mental Health that the National Auxiliary set up a committee on Mental Health in 1953. Mrs. Ross P. Daniel was made chairman of this committee. She contacted each State president asking them to appoint State chairman and the same contact and appointments were used on the county level.

Mrs. Daniel says the first step in our Mental Health program is self education. Very little is being done for the mentally ill in Arizona. We do have an Arizona Mental Health Association and Pima County has an active Mental Health group. Through the efforts of the Tucson Junior League, Tucson had a Child Guidance clinic started in November of 1953. The Junior League voted to pay $6,000 for one year toward starting a clinic which is hoped to be a community project. They have a 19 member Board of Directors representing nine organizations. Pima County Medical Society appointed four doctors to serve on the Board. These doctors did the actual selecting of the personnel for the clinic. This clinic is the first in the state providing psychiatric care for children who have emotional problems. At the present time Phoenix has a committee, formed by the Community Council, and is making plans for a Child Guidance clinic.

As doctors wives we must take a part in these organizations and help to dispel the fears as well as the indifference about mental illness. We can help interested groups to promote good mental health programs. In 1952, Oren Root, then president of the National Association of Mental Health, said something must be done or "one out of every twelve children born in the United States this year will at some time in the course of life suffer a severe mental illness."

In Arizona we are just pioneering so let us all take the first step and start to educate ourselves, we have a job ahead.

Mrs. D. L. Secrist
Tucson, Arizona

AMERICAN GERIATRICS SOCIETY
The 1954 Annual Meeting

The 11th Annual Meeting of the American Geriatrics Society will be held at the Hotel Fairmont in San Francisco just preceding the meeting of the American Medical Association. The scientific sessions of the meeting will begin Thursday afternoon, June 17, and continue through Saturday morning, June 19.

Hotel reservations should be made through the San Francisco Convention and Visitors Bureau, 200 Civic Auditorium, San Francisco 2, California. Members should reserve accomodations immediately, stating time of arrival and departure date, because the hotels expect to be filled to capacity.

The Annual Business Meeting will be held in the Fairmont Hotel Thursday morning, June 17, at 9 o'clock. The room for this meeting will be announced later. All Scientific Sessions will be held in the Nob Hill Room of the Fairmont, and the annual dinner is scheduled for the Gold Room on Friday evening, June 18.

The meeting will be open to all members of the American Geriatrics Society and to physicians and other scientists who are interested in the field of geriatrics. The program will cover many aspects of geriatric medicine, and there will be several panel discussions on such subjects as recent developments in cardiology and methods of determining operability in older patients. Outstanding clinicians and investigators will participate.

Dr. Laurance W. Kinsell, Highland Alameda County Hospital, 2701 Fourteenth Avenue, Oakland 6, California, is in charge of local arrangements for the meeting.

W. O. Thompson, M. D.
President
700 North Michigan Ave.
Chicago 11, Illinois

ARIZONA MEDICINE

Journal of ARIZONA MEDICAL ASSOCIATION

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TABLE OF CONTENTS

OFFICERS

ARIZONA MEDICAL DIRECTORY 6A
WOMAN'S AUXILIARY DIRECTORY 6A
COUNTY MEDICAL SOCIETY OFFICERS, 1954 DIRECTORY 162

ORIGINAL ARTICLES

TREATMENT OF STRABISMUS 127
Paul Henry Case, M.D., Phoenix, Arizona
SOME FACTORS AFFECTING THE DIAGNOSIS OF CARCINOMA OF THE STOMACH 129
Ross Golden, M.D., New York, New York
SOME MODERN ASPECTS OF ESTROGEN THERAPY IN WOMEN 132
Edmund W. Overstreet, M.D., San Francisco, California

MEDICAL PROBLEMS

PHOENIX CLINICAL CLUB 137
Henry L. Franklin, M.D., Phoenix, Arizona

PRESIDENT'S PAGE

ANNUAL MEETIN' TIME 144

EDITORIAL

PARDON US IF WE'RE PROUD 145
SOMETHING NEW IN TAPE 146

TOPICS OF CURRENT MEDICAL INTEREST

RX., DX., AND DRS. 148
Guillermo Osler, M.D.
WORKDAY OF THE SOVIET PHYSICIAN 150
INTERESTING TOPICS — "Dr. Jack Witten And His Boys"; "How About Hawaii?"; "Toxic Effects Of Phenylbutazone" 152
W. W. Watkins, M.D., Phoenix, Arizona
ORGANIZATION PAGE — "Health Insurance Council's Accident and Health Coverage in the U. S." 153
Norman A. Ross, M.D., Phoenix, Arizona
ARIZONA PHARMACEUTICAL PAGE — "Your Future!!!" 154
Arizona Pharmaceutical Association
THE PROFESSIONAL BOARD — "Crippled Children in Arizona" 156
George A. Williamson, M.D., Phoenix, Arizona
THE AMERICAN CONGRESS OF PHYSICAL MEDICINE & REHABILITATION 159
TAPE RECORDED POSTGRADUATE SERVICE AVAILABLE 159
AMERICAN NATIONAL RED CROSS AND ARIZONA SOCIETY FOR CRIPPLED CHILDREN AND ADULTS, INC. 159
RELATING TO DEAD BODIES TISSUE, EYE, BONE, CARTILAGE OR BLOOD BANK 160

WOMAN'S AUXILIARY

AN INVITATION 160
WHY THE "BRICKER AMENDMENT" IS IMPORTANT TO THE MEDICAL PROFESSION 161

DIRECTORY

LABORATORIES 162
SANATORIUM DIRECTORY 22A
DRUGGISTS DIRECTORY 25A
PHYSICIANS DIRECTORY 27A

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ARIZONA MEDICINE
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Original ARTICLES

TREATMENT OF STRABISMUS

Paul Henry Case, M.D.
Phoenix, Arizona

THE TREATMENT of strabismus is so poorly understood by many practitioners outside the practice of Ophthalmology that I wish to take this opportunity to discuss with physicians in other fields the necessity of early diagnosis and early treatment of this condition. Rarely a week goes by but that I see one or two cases of strabismus who have been told by physicians, well-meaning friends, or by relatives that the condition is one which the child will outgrow and that no treatment is need. This is seldom the case and the vast majority of these cases are allowed to drift with no treatment or without adequate treatment. Thus, valuable time is lost, for, the earlier the strabismus is treated, the more favorable are the end results. These laymen feel that the abnormal conditions will be outgrown because they knew of some case in which, as the child grew older, the condition seemed to improve. It is true that in time often there is some decrease in the actual degree of squint. However, it must be remembered that in dealing with strabismus we have two important aspects: The first aspect is the functional, the ability of the individual to fuse the images of the two eyes together and thus use the two eyes together. The second aspect is the eosmetic appearance.

The principles of binocular fixation and stereopsis must be known to properly understand why early treatment is so very important. We all know that when the axes of both eyes are fixed on the same image, which they normally do, both eyes function together.

Those of us with normal eyes fuse the images of the two eyes together, and this gives us not only fusion but stereopsis, which is commonly known as depth perception. To appreciate the importance and value of stereopsis, one has only to close one eye and try to judge distance while driving a car, walking up and down steps, or reaching for something away from us, to see how poor one's judgment is when only one eye is being used.

When one eye is looking straight at an object and the other eye is either diverging or converging, one of two things happen. Either a person has diplopia, which happens rather frequently after head injuries and cerebral accidents or, secondly, the vision in the eye which is not fixing is suppressed, and the person has monocular vision.

It is this ability to suppress which enables the individual with strabismus to keep from seeing double all the time. Thus, when a small child has an eye which is either converging or diverging, the child learns to suppress the vision in that eye. The parents often feel that the child's eyes are not bad because he seems to see well enough. If the vision in the good eye is normal, the parents have no reason to believe that his vision is impaired. This is also why parents are so often told to forget about the eyes. It is true that he is probably seeing well with the one eye that is fixing. They do not realize that, as a result of suppression, the vision in the non-fixing eye becomes impaired. It is only when a careful visual checkup is taken of the child that the poor vision in the non-fixing eye is rec-

Read before the Arizona Medical Association, April 1953, Tucson, Arizona.

ognized. Also, competent examination is needed in order that the suppression be recognized.

To understand why strabismus may be present, one must know the anatomy and physiology of vision and eye muscles. There are three different factors which may cause strabismus to be present.

The first factor is mechanical in which the stronger muscle is pulling the eye either in or out and its antagonist is weaker, and thus the strabismus occurs. The second factor may be neurogenic due to improper innervation. The third factor is the accommodative factor. The muscle of accommodation or ciliary muscle is supplied by the third nerve. In turn, the ciliary muscle is used to overcome the hyperopia by increasing the refractive power of the lens. The third nerve, one will recall, also supplies the internal rectus but does not supply the lateral rectus. Therefore, when one over accommodates to overcome the hyperopia, the third nerve is stimulated; thereby, overstimulating the internal rectus muscle with a resulting convergence strabismus. However, when the hyperopia is corrected with glasses, thereby relieving the strain on the ciliary muscle, the over-stimulus to the third nerve is no longer necessary and often the eyes will straighten. Unless there is an inherent amblyopia, when the eyes are straight, binocular vision is often obtained and suppression is overcome. However, as long as the eye does converge, suppression is necessary to keep from having diplopia.

Divergence is frequently associated with myopia and the correction of myopia will often hold the eyes in line.

Strabismus may be treated by wearing glasses to relieve the over-convergence or divergence. The use of occlusion of the fixing eye will build up the vision in the converging or diverging eye by making the patient use this eye. A prerequisite for fusion is good vision in each eye. However, after the age of seven years, occlusion is of very little or no value. When the visual acuity of both eyes is equal, the patient should be able to use both eyes together unless there is a fusional mal-development. If the eyes are still not straight, surgery is indicated to put the eyes in alignment. In cases of failure, it must be remembered that a certain percentage of strabismus cases will not fuse because of the congenital lack of fusion power. It must particularly be remembered that fusion is developed between the ages of five and six years of age. Thus, if the vision is not good in each eye and the eyes straightened by the age of six years, the prognosis for a good functional result is not good. However, even though fusion is not possible, surgery does put the eyes cosmetically straight which is very important. The results of surgical treatment of strabismus are constantly improving as a result of constant study by ophthalmic surgeons. Complications are much rarer, as a result of improved post and preoperative care and better anesthesia technique.

In summary, if these facts were more widely known and cases brought in for early diagnosis and treatment, the end results of our efforts would be vastly improved as to the psychological, visual, fusional, and cosmetic effect.

SOME FACTORS AFFECTING THE DIAGNOSIS OF CARCINOMA OF THE STOMACH*

Ross Golden, M.D.
New York, New York

INTRODUCTION

CARCINOMA of the stomach is a perennial problem in medicine, and a constant challenge to all doctors who deal with abdominal symptoms. Two direct methods of attacking the diagnostic aspects of this problem are x-ray and gastroscopy. These two methods should not be regarded as rivals but as complementary, each having its particular advantages and limitations. This discussion will deal with certain fundamentals involved in the detection of cancer of the stomach by x-ray procedures which should be familiar to all practitioners of medicine as well as to those whose job it is to use this method of examination.

Carcinoma of the stomach can be detected by x-ray methods only when it produces a recognizable modification of the form or the movements of the stomach. This depends upon two factors: (1) the gross growth characteristics of the neoplasm, and (2) its location in the stomach. The latter will be discussed first.

LOCATION OF THE GROWTH IN THE STOMACH

A study of the x-ray films of 315 proved cases of carcinoma of the stomach seen at the Presbyterian Hospital in New York showed that approximately 75 per cent arose in the antrum, 20 per cent in the body or media, and 5 per cent in the fundus. The fundus may be defined as that portion of the stomach lying roughly above the level of the cardiac orifice, the body or media as that portion between the cardiac orifice and the incisura angularis, and the antrum as the portion which turns to the right and extends to the pylorus. It is apparent that the great majority of carcinomas arise in the lower half of the stomach. This is the motor portion, accessible to palpation and pressure under the fluoroscope, where abnormalties of form and disorders of movement can be most easily demonstrated. Carcinomas of the fundus in general are much more difficult to detect and present technical problems beyond the scope of this discussion.

GROSS GROWTH CHARACTERISTICS

Carcinoma of the stomach arises in the mucous membrane but grows in different ways in different individuals. Classification of these growths according to the microseopic appearance of the cells is useless from the standpoint of understanding the effect of the neoplasm on the stomach wall. Furthermore, I am informed that the characteristics of the cells may vary in different parts of the growth. On the other hand the manner in which the growth involves the wall is of great importance. This — i.e. the gross growth characteristics — is the basis of Stout's Classification of Carcinoma of the Stomach (Golden and Stout).

1. Fungating
2. Penetrating
3. Spreading
 a. Superficial type.
 b. Linitis Plastica type.
4. Advanced, unclassifiable.

Fungating growths were present in 26 per cent of 342 cases seen in the department of Surgical Pathology at the Presbyterian Hospital between 1937 and 1949. This type forms a mass projecting into the lumen. It may reach a large size before it penetrates into the submucosa, and it metastasizes late. It may or may not ulcerate.

The **penetrating** type apparently extends through all layers of the stomach wall to the serosa early in its development. It destroys and replaces the muscle. It invariably ulcerates. This type was found in 32 per cent of 342 cases.

The **superficial spreading** type extends along the wall in the mucosa and submucosa and in some cases is limited to the mucous membrane. It may produce tiny nodular elevations on the surface. It may ulcerate. This is the type of carcinoma found in the mucous membrane adjacent to the margin of some gastric craters which have the structural characteristics of benign peptic ulcers. The new growth may completely encircle the crater but usually involves only a portion of its circumference. The carcinoma adjacent to the benign crater may itself ulcerate producing a double or a lobulated cra-

*From the Radiological Service of Presbyterian Hospital, and the Department of Radiology of the College of Physicians & Surgeons, New York. Read before Arizona Medical Ass'n., Tucson, Arizona, April 29, 1953.

ter shadow. In its later stages the malignant cells pass to the serosa through the muscularis without destroying or replacing the muscle cells. In one instance the mucosa of the entire stomach was replaced by carcinoma, with malignant cells lying among the muscle bundles of the hypertrophied muscularis; this stomach expelled barium rapidly but the contractions were unlike flexible peristaltic waves. In other instances a slight stiffening or flattening of the wall was present at the site of involvement of a relatively small area with no extension into the muscularis itself. The reason for this phenomenon is not clear.

Superficial spreading carcinoma comprised 11 per cent of 342 cases, of which approximately four-fifths were associated with ulceration, either with a peptic ulcer or with an excavation in the cancer itself. The abnormality is more easily detected if an excavation in the carcinoma is present. As a result of follow-up observations on some of the early cases, Dr. Stout believes the prognosis is better in this type of cancer than the average of all cancers of the stomach.

The Linitis Plastica type of spreading carcinoma extends along the wall in the submucosa, the muscle coat and subserosa. It does not destroy the mucosa until very late in the disease. It is often associated with high stiff mucosal folds, closely resembling those associated with gastritis in some cases both on x-ray and gastroscopic examination. The malignant cells stimulate the growth of fibrous tissue in most cases, which may vary from very slight to extreme. The Linitis Plastica type of carcinoma was found in 6 per cent of 342 cases.

Dr. Stout concludes his classification with the group of carcinomas which are too far advanced to be classified under the above headings. This group comprised 25 per cent of 342 cases.

It is quite obvious that the problem of detection of the carcinoma by x-ray methods is different in these groups.

GROWTH CHARACTERISTICS AND THE X-RAY EXAMINATION

The fungating carcinoma is the easiest of all to detect by x-ray methods because of the mass which produces a filling defect in the barium shadow. It may be simulated by any mass which projects into the lumen from the stomach wall, for example a small leiomyoma, a polyp or a localized mass of so-called giant mucosal folds. If the fungating carcinoma has ulcerated it is unlikely to be confused with another growth.

The penetrating carcinoma is easily detected because of its excavation. The problem is to differentiate it from a benign gastric ulcer. This will be discussed later. This growth replaces muscle and stiffens the wall over the involved area.

Superficial spreading carcinoma extending along the wall and replacing the mucosa sometimes produces small nodular elevations on the surface and at least in many cases obliterates peristalsis over the involved area in spite of the fact that the muscle has not been destroyed. It often causes a localized segmental spasm of the muscularis manifested by an incisura. Small nodules on the mucosa may also be produced by gastritis.

This is the type of carcinoma sometimes found adjacent to an excavation which has all the pathological characteristics of a benign peptic ulcer. The typical benign ulcer extends through all coats of the stomach and has its base on or beyond the serosa. The depth of the benign crater is usually relatively great as compared to its diameter. Its margins are often undermined. The mucosal folds radiating toward it often appear to extend into the crater.

The excavation in the penetrating or superficial spreading carcinoma is shallow with sloping saucer-like margins, without undermining, and appears to be intramural rather than extending through the wall. The mucosal folds radiate toward but usually stop short of the crater. Some benign peptic ulcers are shallow and do not penetrate through the wall, and for this reason unfortunately the differential diagnosis cannot be made with absolute certainty in some instances. Ulceration may occur in superficial spreading carcinoma arising in the mucosa adjacent to a benign crater. This may produce a bilobed or trilobed crater.

A differential diagnosis between a penetrating ulcer and an ulcerating superficial spreading carcinoma cannot be made with certainty. Under some circumstances a trial of medical treatment is advisable on the theory that the benign ulcer will reduce in size during a period of two to three weeks. Unfortunately, the excavation in some carcinomas will fill in to a certain extent with carcinoma tissue when the digestive power of the gastric juice is reduced. However, the two types of ulcer respond dif-

ferently. The benign crater is usually reduced to one-half its previous size or less in three weeks; it diminishes in transverse diameter as well as in depth. The crater in the carcinoma reduces somewhat in depth but changes very slightly in transverse diameter. Failure of a crater to behave properly under treatment can be taken as evidence in favor of malignant disease.

The Linitis Plastic type of carcinoma is the most subtle, difficult and dangerous of all. Because it infiltrates to and along the subserosa, it metastasizes relatively early through the lymphatics and spreads over the peritoneum. Because the muscle is not destroyed, the wall is not stiffened until very late and even when the growth is extensive apparently normal peristaltic waves pass along the stomach wall. In some cases the mucosal folds may be obliterated, but more frequently they are elevated in a manner simulating the effect of gastritis polyposa. In such cases gastroscopy discloses large folds of apparently intact mucosa.

The amount of fibrous tissue associated with the Linitis Plastica tumor cells in the wall varies greatly in different individuals. In one case practically no fibrosis was present but the tumor cells spread through the wall in typical Linitis Plastica fashion. In well advanced cases the mucosal folds are large and stiff, and pressure films may show the creases between the folds radiating from a point which resembles a crater shadow but which is not an ulcer. It is my impression that, when fibrosis is marked, the inner surface of the stomach is more likely to be abnormally smooth and to resemble the rare cases of atrophic gastritis with very few mucosal folds. Its lesser curvature margin may show fine irregularities. The more the fibrosis, the more the stomach becomes diminished in size with reduced expansibility or distensibility when a barium preparation is swallowed or when air is introduced for gastroscopy.

It must be emphasized that this description of this disease is inadequate. In my experience this type, even when well advanced, is the most difficult of all carcinomas of the stomach to detect and to differentiate from inflammatory changes. I have yet to see a case survive as long as five years after resection.

The unclassifiable advanced growths are, in the great majority of cases, demonstrated by x-ray methods with relative ease and need no further discussion here.

DISCUSSION

The symptoms described by patients are in general of little help in the detection of carcinoma of the stomach. However, frequent recurrence of indigestion or pain, in spite of an adequate regime, and persistent loss of weight, are of significance. Unfortunately, many carcinomas reach considerable size before they produce symptoms. My clinical colleagues tell me that in many cases carcinoma of the stomach is associated with symptoms suggestive of a psychosomatic disorder rather than organic disease of the stomach. The radiologist, therefore, must establish a routine to be carried out as if every examined stomach were suspected of harboring a carcinoma.

A number of writers have discussed the advisability of attempting a survey type of examination of the stomach analogous in purpose to the x-ray examination of the chest of symptom-free people being done by Public Health agencies to discover cases of tuberculosis in apparently healthy people. It is my impression that this interesting experiment is impractical for general application although gastric lesions will be discovered in a very small percentage of symptomless individuals in the so called cancer age. The problem of stomach cancer is different from that of pulmonary tuberculosis. The individual with tuberculosis is a potential danger to those with whom he comes in contact, while the cancer of the stomach is important only to the unfortunate individual who has it.

SUMMARY

The detection of carcinoma of the stomach by x-ray methods and to a certain extent by gastroscopy depends upon two basic physical factors: (1) the location of the growth in the stomach, and (2) the gross growth characteristics of the tumor, i.e., the physical manner in which the tumor involves the stomach wall. Stout's Classification is based on this second factor and is the foundation for an understanding of the clinical evolution of this disease and of the difficulties encountered in attempting to detect it.



SOME MODERN ASPECTS OF ESTROGEN THERAPY IN WOMEN

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EVEN though various estrogen compounds, both natural and synthetic, have become very familiar to us over many years of use, they still remain fascinating and mysterious substances. They are strikingly powerful compounds. Like any powerful drug, they can be tremendously beneficial if properly used. By the same token, they can do great harm if improperly used. With the steady increase of knowledge regarding these hormones must of necessity go a continual change in our ideas about when they should be used therapeutically and how they should be used. Consequently, it is important to review rather frequently our current concepts about estrogen therapy in women.

In accomplishing such a review it is worthwhile to start with a list of the basic biologic actions of estrogens in women.

Basic Biologic Actions of Estrogen (Females)

A. Local estrogenic activity.
 1. Promotes growth and cornification of vaginal epithelium.
 2. Stimulates secretion of cervical glands.
 3. Stimulates growth of endometrium.
 4. Arrests endometrial bleeding - large doses.
 5. Produces endometrial bleeding - on withdrawal.
 6. Stimulates growth of myometrium.
 7. Alters uterine motility.
 8. Stimulates growth of mammary ducts.

B. Pituitary inhibition.
 1. Can suppress ovulation - large doses.
 2. Prevention of postpartum breast engorgement.
 3. Inhibits body growth.
 4. (Suppression of menopausal symptoms - mechanism uncertain).

C. Metabolic activity.
 1. Anabolic for bone - mineralization.
 2. Accelerates epiphyseal closure.
 3. Special effects on skin and mucous membranes.
 a. Atrophic rhinitis.
 b. Senile keratosis.
 c. Conjunctival changes.
 4. Na^+ ion retention.
 5. Blood dilution.
 6. Produces anemia.
 7. Lowers body temperature.

D. Anti-androgenic effect.
 1. Inhibits acne.
 2. Anti-alopecia (males).

E. Mechanism obscure.
 1. Inhibition of mammary carcinoma - in some cases.
 2. (Suppression of menopausal symptoms) — see B.
 3. Regression of endometriosis - large doses.

F. Doubtful effects.
 1. Prevention of pregnancy toxemia.
 2. Stimulation of corpus luteum - small doses.
 3. Regression of polycystic ovaries.

These biologic actions must be kept continually in mind if clinical usage of these compounds is to be truly skillful, and if the pitfalls of improper usage are to be avoided. The list of doubtful biologic effects should be especially noted. Their validity is most dubious at the present time. In the present state of our knowledge they cannot yet serve as a satisfactory basis for clinical usage.

The following table for useful estrogens will also be of value in accomplishing our review. (Table on page 133).

It may well be thought that surprisingly few products are listed. This is by design. There is on the market today an almost astronomical number of various estrogen preparations. Many of them claim special advantages which simply do not stand up under sharp scrutiny. Differences between most of the products are insignificant or non-existent. Indeed, a close approximation to the truth can be had by paraphrasing Gertrude Stein, "An estrogen is an estrogen is an estrogen is an estrogen."

It is advisable, therefore, to choose only a few estrogen products and to use them well. It is the only way in which one can become familiar with their effects and their side-effects at various dosage levels. Patients will derive much more benefit from this type of approach

Read before the Arizona Medical Association, April 1953, Tucson, Arizona.

USEFUL ESTROGENS

Type of Estrogen	Equivalent dose (approximately) *	Trade Products	Advantages	Disadvantages
Stilbene-hexane compounds	0.5 mgm.	Stilbestrol Hexestrol Dienestrol Benzestrol etc.	Low cost. Oral route. Synthetic-pure Large dose forms (Stilb. 25 mg.)	Side effects - nausea-occasional; epithelial pigmentation.
Natural estrogens-conjugated equine	0.625 mgm.	Premarin Conestron Menagen Na Estrone SO_4	Side effects-rare. Well-being(?) Oral route.	High cost. Impure. Odor.
Natural estrogen derivatives: - Ethinyl estradiol	0.02 mgm.	Estinyl Lynoral Eticylol	Moderate Cost Side effects - rare. Oral route. Synthetic-pure.	
Natural estrogens for injection: -	0.5 mgm.	Di-ovocylin Progynon-DP	Long effect. (12 d) Quick effect. (hypo)	High cost. Injection.

* To the nearest available commercial dose size.

than by the haphazard trying of this or that or the other estrogen preparation.

Perhaps the most recent important advance in the field of estrogen therapy has to do with our better knowledge of the safeguards which must be observed during its use. The most important of these is the cyclic administration of estrogens — as opposed to continuous administration. In the management of gynecologic problems with estrogens, daily dosage should be stopped for a period of from three to seven days out of each month. For the woman whose menses are still present, this rest period should as nearly as possible coincide with her regular menstrual periods. The reasons for this cyclic therapy are important. First, with continuous administration, patients will gradually develop a tolerance to estrogens, and increasingly high dosage will be required to obtain the same results. Second, estrogens have a tendency to produce anemia when given steadily. They also have some degree of toxic effect on liver and kidneys. Third, when given continuously in fairly large doses, estrogens can, of course, produce amenorrhea; and this may not be at all desirable. Fourth, more important than amenorrhea is the irregular bleeding which often results if estrogens are given without rest periods. This is perhaps the most worrisome complication of estrogen therapy that we see today. Moreover, it becomes a truly grave matter when, in the woman receiving estrogen therapy, the assumption is made that episodes of irregular bleeding are due to the hormone administration and they actually turn out to be due to cancer of the uterus. The fifth reason for cyclic therapy has to do with growth effect. With continuous dosage of estrogens this effect on the reproductive tract may be so great as to give undue growth of polyps, fibroids, and the like. This leads to undesirable secondary problems. Cyclic therapy also helps to avoid mastodynia. If estrogens are given unremittingly, breasts may become intolerably painful. The same build-up of effect can also occur with salt retention. This mechanism has a tendency to produce edema in all women to whom we give estrogens. And the process can become rather marked and even dangerous — in cardicas for example — if the estrogen is given without respite.

What has been said about cyclic estrogen administration should make understandable our attitude toward pellet implantation as a mode of administration. Absence of cyclic dosage, variability in absorption, uncontrollable side-

effects, the difficulty of stopping dosage, and the modern availability of satisfactory oral estrgoen preparations make it a most undesirable method. The same is true, to a lesser degree, of the hypodermatic administration of estrogens. It gives fluctuating blood levels of the hormone which not only lead to complications but also are less effective therapeutically. When estrogens are given by mouth one or more times daily, much smoother blood level curves are obtained which are much more satisfactory. It is also a much easier and much less expensive way for patients to take the medication. Nevertheless, situations do occur in which rapid, marked estrogen effect is desirable — for example, in the initial management of very severe menopausal symptoms or in the initial arrest of dysfunctional uterine bleeding. There is also the occasional woman for whom the needle obtains better results than does the pill — for reasons which are probably psychogenic.

Even before the start of any estrogen therapy there are two other safeguards which must be thought of. The first has to do with patency of the cervical canal. We see today entirely too many women in the post-menopausal group who develop serious degrees of hematometra or pyometra because estrogens were prescribed and the cervical canal happened to be atretic and closed. Whenever doubt exists about its status, it is a simple enough matter to pass a small uterine sound to make certain of cervical patency. It may well avoid unfortunate professional embarrassment. As a second safeguard, it is well to be on the alert for the post-menopausal woman who has previously had menstrual migraine. Giving estrogens may well bring it back in all its previous unpleasant glory.

During the course of long continued estrogen therapy certain simple precautions are in order. It is most important that such women be seen for periodic pelvic examinations. It is essential to check on the unexpected growth of small fibroids, effect on ovaries, the possible development of hematometra or pyometra, the growth and activation of unsuspected endometriosis, and -- perhaps most important of all — the coincident development of cancer of the reproductive tract. For example, a woman whose menopausal symptoms are nicely controlled on a cyclic, oral dosage of estrogen should not be allowed to go more than three months at the most without such a check-up pelvic examination. The same is true of examination of the breasts. Not too infrequently a patient like the example above coincidentally develops breast cancer. Obviously then, the further giving of estrogens is utterly contraindicated. Unless we are continually on the lookout for such situations, it is easy to run into an occasional case that may produce the horribly guilty feeling of actually having stimulated the progress of breast or reproductive tract cancer by the irresponsible giving of estrogens.

More attention should be given by the literature to the actual contraindications to estrogen therapy. Certainly the history of any previous breast or genital cancer will rule it out entirely — except where high dosage treatment is to be used in specific management. Usually the presence of uterine fibroids will contraindicate estrogen therapy because of the danger of stimulating too rapid growth. The same is true, of course, of endometriosis. Small doses of estrogens — as in management of the menopause, for example — will definitely aggravate minor degrees of endometriosis. The specific management of endometriosis with large estrogen dosage is still in such an experimental stage that it cannot yet become a part of our routine clinical usage.

Other contraindications to estrogen therapy arise out of the hormone's undesirable, unpleasant side-effects. Nausea, irregular bleeding, edema, and mastodynia may totally contraindicate its use, and it may be necessary to turn to the androgens to accomplish our purposes. A previous history of mastodynia will indicate the utmost caution in starting estrogen therapy, and may contraindicate it entirely.

In a sense, today, the most important contraindication to the use of estrogens is incorrect diagnosis of the menopause. Probably the most important single use of estrogen therapy in women is for the management of menopausal symptoms. But it is in this field that abuse of this powerful therapeutic agents tends to occur most easily. Most of us at one time or another have been tempted to give estrogens to women in their thirties just because they are nervous — or they are depressed — or they are tired — or their libido is declining. Such symptoms can and do occur as part of the menopausal syndrome. But is the menopause their **usual** cause? A moment's reflection will indicate the contrary—or else we are seeing today a lot of menopausal men.

It is well to bear in mind that the average age for the menopause in this country is forty-seven. Yet we see many women today who, at the age of thirty-three or thirty-five or so, because they are a little tired or nervous, clamour for estrogens — and occasionally get them. When such a woman obtains benefit from estrogen therapy it is simply as a placebo, serving as a substitution psychotherapy; almost any kind of brightly colored, coated pills would do as well — as we easily discover if we try them. Diagnosis of the menopause should be made very rarely and with the utmost care under the age of forty. It does occur, but usually for good pathologic reasons which are ordinarily discernible. Simple physiologic menopause occurring below the age of forty is always a suspect diagnosis — except, of course, for surgical or radiation menopause, an entirely different matter.

In order to make a diagnosis of menopausal changes some alteration of the menses must be present. There must be a definite, specific history of hot flashes, described well and accurately by the patient, without leading questions. So many women these days have read so much popular literature about the menopause that as soon as they get a little bit warm, under any circumstances, and especially over the age of forty, they assume that they are having hot flashes. The nature of typical menopausal vasomotor symptomatology is perfectly familiar, and it is quite specific. Such a description should be required of a patient before leaning toward a diagnosis of the menopause.

In a few cases extreme melancholia in association with menstrual changes may be considered menopausal symptomatology. And in some women menopausal symptomatology will occur primarily in the vaginal area as a result of the mucous membrane changes due to estrogen deprivation. These are ordinarily easily diagnosed either by inspection or by vaginal smears.

It is the general concensus today among expert gynecologists that of all menopausal women only about thirty per cent will seek medical aid for the relief of true symptomatology. And it is generally agreed that only about one-half of these will need any actual hormonal therapy. The other half can easily be managed by reassurance about the nature of the menopause with perhaps the temporary addition of mild sedation. So only about fifteen per cent of all women who will actually have menopausal symptoms severe enough to warrant the use of endocrine therapy.

When it is used what will our objectives be? Primarily, of course, we aim at controlling the distressing hot flash symptomatology and the concomitant symptoms of nervousness, tension, and occasionally depression. But beyond this what? Are we attempting to keep women eternally young by means of hormone administration? Of course not. In the first place it cannot be accomplished. In the second place, the long continued administration of estrogens has definite drawbacks in terms of side-effects. In addition, it is still not entirely certain just what actually occurs when a woman's normal involutional pattern is upset to such a degree. Lastly, there is always the lurking suspicion — although no actual proof is adduceable — that carcinogenesis may enter the picture somewhere.

In any event, the prime objective of hormonal management of menopausal symptoms is simply to slow down the menopausal changes, not to attempt to stop them. It appears that severe symptoms tend to occur when the physiologic hormonal changes take place too abruptly in the body. So our objective is simply to make the menopausal alterations more gentle and tolerable ones. From this point of view, one will always strive for the smallest dosage of estrogen consistent with relief symptomatology. It should always be given in cyclic fashion. Consistent attempts should be made to taper down the dosage level and to cease it entirely as soon as possible. Sooner or later the patient must adjust to her menopausal changes. Once they really start, the sooner the better.

The major portion of this paper's discussion has been devoted to management of the menopause because it is by far the most important modern aspect of estrogen therapy in women. But a few special comments about some of the other clinical conditions in which estrogens are of value my be worthwhile. These conditions are outlined below.

Clinical Applications

A. Diagnostic.

1. Amenorrhea. Withdrawal bleeding = functional endometrium.
 Dose: 0.05 - 0.1 mgm. Estinyl x 21 days
2. Dysmenorrhea. Ovulation suppression→ relief = functional.
 Dose: 2-5 mgm. Stilbestrol x 21 days. Premarin, 3.75 mg. per day — no nausea, more expensive.

3. Pregnancy test. 5-25 mg. Stilbestrol; no nausea = presumptive pregnancy.

B. Therapeutic - definitely useful.
 1. Menopause.
 a. Natural. 0.1 - 0.1 mgm. Stilbestrol cyclically: if menstruating, rest period during menses.
 (1) Least dose consistent with relief.
 (2) Taper down dosage as rapidly as rapidly as possible (except with osteoporosis).
 b. Surgical or radiation. Long substitution Rx.
 2. Senile vaginitis. Local Stilbestrol suppositories, 0.1 - 0.5 mgm. nightly x 14 days.
 3. Suppression of lactation. (Engorgement) Stilbestrol, 15 mgm. daily, tapering to 1.0 mgm. daily over 2-3 weeks.
 4. Post-menopausal osteoporosis.
 5. (Organic hypogonadal states).
 6. (To prevent osteoporosis with high dosage ACTH and Cortisone).

C. Therapeutic - possibly useful.
 1. Dysmenorrhea. Dose as above. Suppress only 2-3 cycles. Not a permanent Rx.
 2. Amenorrhea. Dose as above. 3-4 artificial cycles. Estrogens best in combination with progesterone last 5 days of artificial cycle.
 3. Dysfunctional bleeding. (Accurate diagnosis essential!)
 a. Immediate arrest. Large doses.
 b. Permanent correction. Various schedules. Best with progesterone for "medical curettage."
 4. Infertility. To stimuate cervical mucus secretions. Small doses pre-ovulatory. For mild chronic endocervicitis + Penicillin.
 5. Post-menopausal bladder-trigone syndrome. Dose: as for senile vaginitis.
 a. Androgens may be preferable.

D. Therapeutic - doubtful value.
 1. Genital hypoplasia (infertility). Large doses, prolonged.
 2. Missed abortion. Large doses x 7 d., withdrawal.
 3. Menstrual migraine. Small-doses, premenstrual.

E. Experimental only.
 1. Habitual abortion.
 2. Prevention of toxemia.
 3. Rx of endometriosis (large doses).

F. Probably valuless (abuses).
 1. Mastalgia.
 2. Premenstrual tension.
 3. Frigidity.
 4. Induction of labor, uterine inertia.
 5. Homosexuality.
 6. Missed abortion.
 7. Threatened abortion.

Estrogens can, on occasion, be useful as a diagnostic tool. In amenorrhea their temporary administration followed by withdrawal bleeding gives good evidence of a functioning endometrium. Attention can then be turned elsewhere in seeking the etiology of the amenorrhea.

In dysmenorrhea estrogens can aid in the study of its nature. They can be used very satisfactorily to suppress ovulation. Such an anovulatory cycle should result in a relatively painless menstrual period for the women whose dysmenorrhea is on a truly functional basis. If the menstrual period which follows definite suppression of ovulation is about as painful as usual, it can be strongly suspected that some organic basis has been overlooked or that the dysmenorrhea is purely psychogenic in origin. As a matter of fact, in at least 80% of dysmenorrheic women the psychogenic etiologic factor is large. And suppression of ovulation by means of estrogens to give two or three relatively painless menses can serve as a good method of temporary psychotherapy. It shows the patient that she need not necessarily have severe pain with periods, thus breaking, at least to some degree, the psychogenic pattern of her dysmenorrhea. Obviously, suppression of ovulation is only a temporary expedient in the management of dysmenorrhea; it should not be used as a long-term method of treatment.

Senile, atrophic vaginitis is one of the conditions in women which responds best to estrogen medication. The use of simple, water soluble suppositories containing estrogens can effect miraculous cures of what is sometimes very annoying symptomatology. Suppression of lactation following childbirth by means of estrogens is a thoroughly familiar therapeutic method. One warning about it is worthy of mention. It is essential to taper off the estrogen dosage over a period of two to three weeks following delivery in order to avoid the occurrence of secondary lactation and late puerperal bleeding. The problem of post-meno-

pausal osteoporosis is only now gaining the attention that its importance deserves. Here the prime indication is for estrogens, and they often miraculously cure rather severe symptomatology.

The problem of dysfunctional uterine bleeding is an entire subject in itself, and no brief discussion of it is at all satisfactory. It would appear, however, that we are turning more and more to the use of androgens in the management of this sort of uterine bleeding.

The list of therapeutic uses of estrogens that are doubtful, experimental only, or definitely valuless need not occasion discussion here. Passing mention should be made, however, of the increasingly widespread feeling that estrogens are of no value in the management of missed abortion and of threatened abortion, or in the prevention of toxemia. These formerly hopeful areas simply have not proved out on further testing.

It is clear that estrogens are indispensable therapeutic agents for women. But they can be dangerous and do great harm. It is essential that we employ them with the respect, the understanding, and the skill that their powers demand.

PHOENIX Clinical CLUB

The Case History in this discussion is selected from the Case Records of the Massachusetts General Hospital, and reprinted from the New England Journal of Medicine. The discussant under Differential Diagnosis is a member of the staff of the Massachusetts General Hospital. The other discussants are members of the Phoenix Clinical Club.

MASSACHUSETTS GENERAL HOSPITAL CASE NO. 35151

A SEVENTY-YEAR-OLD farmer was admitted to the hospital because of a very productive cough.

For several years he had a chronic cough, most severe in the morning, when he raised moderate amounts of whitish sputum. He was in otherwise good health for his age. Five months before admission the cough increased in frequency and productivity, so that at the time of admission he was raising about half a cupful of yellowish and occasionally blood-stained sputum each day. Progressive lack of appetite, weight loss and weakness appeared. A physician performed an x-ray examination eight days before entry. Penicillin therapy was given. The patient was told that he had a lung abscess that was increasing in size despite chemotherapy and he was transferred here.

On admission he appeared weak and emaciated but in no acute distress. The tongue was red and smooth; he was edentulous, with an upper plate. The trachea was in the midline, and there were dullness to percussion and decreased breath sounds in the region of the right fourth rib posteriorly. There was no change in tactile fremitus. The heart was within normal limits. A small, indirect hernia was present in the right inguinal region. The prostrate was twice the normal size but not hard. The blood pressure was 150 systolic, 90 diastolic.

The urine had a specific gravity of 1.026 and gave a + test for albumin. The white-cell count was 16,800, with 77 per cent neutrophils, 8 per cent lymphocytes, 8 per cent monocytes and 7 per cent eosinophils. The serum total protein was 6.06 gm. per 100 cc., chloride 105 millequiv. per liter, and nonprotein nitrogen 24 mg. per 100 cc. The prothrombin time was 23 seconds (control, 16 seconds).

An electrocardiogram on the fifth hospital day showed a normal rhythm at a rate of 75, with the PR interval equal to 0.15 second and normal axis. The T waves were low upright in Leads 1, 2 and 3, with upright TV_2, V_4 and V_6 and flat TAVL and low upright TAVF.

X-ray examination of the chest showed an increased anteroposterior diameter. Both leaves of the diaphragm were low, and fluoroscipically were seen to be limited in their excursion. The lung fields were bright. In the apex of the right lower lobe lying posteriorly in contact with the chest wall was a rounded shadow, 7 cm. in diameter, in which there was a fluid level. The shadow was slightly lobulated in contour, and the upper portion of the wall of the cavity was seen to be irregular along its inner wall. There was little or no reaction in the surrounding lung. The sputum was negative for acid-

fast organisms, and cytologic examination for tumor cells was reported as "doubtful". Bronchoscopy demonstrated no abnormalities except that the dorsal division of the lower lobe was somewhat reddened, and a thin, whitish, mucoid secretion exuded from it. There was no fixation or deformity here or elsewhere. On the ninth hospital day a right lower lobectomy was performed. Toward the end of the operation the blood pressure fell to 90 to 100 systolic, 50 diastolic. At the end of the operation the blood pressure was up, and the condition was good. A blood transfusion of 2000 cc. was given.

Twelve hours later the patient's general condition seemed good, although there was a hypotension (blood pressure of 80 systolic, 40 diastolic), without rise in pulse. Fourteen hours after operation the blood pressure dropped to 60 systolic, 40 diastolic, and a marked bradycardia (rate of 44) appeared. An electrocardiogram showed an irregular auricular and ventricular rhythm, with auriculoventricular dissociation and prolonged QRS time. Many artifacts obscured the tracing, but the T wave in Lead 1 appeared upright, with a low upright T wave in Lead 2, inverted T wave in Lead 3, and depressed ST segments in Leads CF_2 and CF_4, with probably upright T waves in leads CF_2 and CF_4. He died thirty-six hours after the operation.

DR. HENRY L. FRANKLIN:

Upon first reading this protocol I thought it a simple problem, but the more I have looked at it, the more doubt has arisen. I'm wondering if our good and honest judges aren't playing some tricks.

We are told that an abscess in the right lung was duly and properly diagnosed and removed by surgery. About this, I suppose there is no controversy. I do not suppose we are expected to go into a differential diagnosis regarding it. I would say, however, that according to statistics, which I will not go too far into because one of our judges does not think too much of them, a very, very large percentage of lung abscesses are due to cancer. There was loss of weight, which might not mean too much in an old man who had a cough for a long time. The blood in the discharges is common on all abscesses and does not mean much. There was no history of tuberculosis and nothing found in the sputum to suspect tuberculosis. An abscess appearing without some previously recognized lung pathology is, to say the least, a little strange unless we consider bronchiectasis as being its Genesis. I think we can at least make a guess that the weight of evidence favors cancer as being the cause.

The lower right lung lobe was removed and the patient left surgery with a very low blood pressure. However, after a transfusion he rallied and seemed to be doing well. Fourteen hours after operation, the blood pressure dropped to 80 over 40 and a bradycardia with a pulse rate of 44 developed. This seems evidence of heart failure. We are not given any more information concerning the patient's behavior after this except that he died thirty-six hours after operation. I am assuming that there was no active heart lesion prior to surgery except perhaps sclerosis of the coronary artery. Acute heart failure in a man of 70 following a severe lung operation would not be unexpected. An operation in the chest in close proximity to the heart might easily result in some trauma or damage to the vessels of the heart wall, or result directly in some coronary insufficiency and the EKG seems to indicate a coronary insufficiency with a probable ischemia of the myocardium with perhaps a later infarction before death.

I shall not go further into the many circulatory lesions that may have been present and strive for a simple and logical answer and say that he probably died of heart failure caused by

1. Coronary insufficiency and myocardial infarction.

Other Diagnoses

2. Right lung abscess, probably cancer.
3. Emphysema.

DIFFERENTIAL DIAGNOSIS

DR. LOWREY F. DAVENPORT:

This is the recurrent problem of differential diagnosis between infection and tumor. Did this man have a simple lung abscess? Did he have an abscess that developed secondarily to bronchial obstruction, or was this a primary tumor in the lung with beginning central necrosis to account for the symptoms? I should like to see the x-ray films.

DR. STANLEY M. WYMAN:

The posteroanterior and lateral views show this well rounded, quite discrete shadow of increased density far posteriorly in the right chest and somewhat medially, and it seems to be close to the chest wall. There is a clearly de-



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fined fluid level within this round shadow. The wall of the shadow itself is thickened, and its inner contour is shaggy and irregular as the record states. This is a Bucky film taken for rib detail and shows the ribs and the spine in this area to appear within normal limits. The heart shadow is a little prominent in the region of the left ventricle, and the aorta is quite tortuous. The chest generally is emphysematous.

DR. DAVENPORT:

We have to explain, then, a localized lung lesion in the dorsal portion of the right lower lobe. The differential diagnosis here is between infection and tumor. I believe, in a man of this age with this large an abscess cavity, who had a sputum negative for tubercle bacilli, that we can with reasonable certainty rule out the consideration of tuberculosis. The differential diagnosis lies between a simple lung abscess and an abscess that developed in a necrotic tumor mass. The localization of the abscess in the dorsal portion of the lower lobe is not uncommon for a simple lung abscess. However, we have nothing in the background of this patient to explain the appearance of lung abscess. Presumably his teeth had been removed many years previously, and there is nothing in the history as given to suggest any possible etiologic agent for a lung abscess. Lung abscesses as discrete as this usually show surrounding pneumonitis unless there has been intensive chemotherapy. Rarely in a lung abcess do we see such a sharply demarcated lesion as presented here. Most tumors arising in the bronchial tree in the periphery of the lung of a solitary nature, and of this size, are adenoarcinomas. In such a situation these tumors frequently outgrow their blood supply and show a central necrosis. A Papanicolaou stain on the material taken from the patient's sputum showed a doubtfully positive test. I assume that the material from this tumor was so necrotic that even though he was raising tumor cells, it might be difficult to recognize them under the microscope. The remaining findings at bronchoscopy are of no significance in a tumor situated as far posteriorly as this tumor was. We are given the symptom of chronic cough for several years. Apparently, this was the type of morning cough that a man who has spent seventy years of his life in New England is reasonably entitled to. The cough that became alarming and troublesome had been present for only five months. Cough of five months' duration is not unusual with a tumor such as this is, with a central necrosis. I would think, then, that the lung picture was that of a bronchiogenic tumor, probably an adenocarcinoma, undergoing central necrosis.

I think that secondarily it would be of some interest to try to puzzle out why he died within thirty-six hours of operation. When a patient dies within thirty-six hours of a major operation such as a lobectomy we should like to know, first whether or not a suture had slipped following cough as he began to rouse from the anesthesia. However, with the drop in blood pressure the pulse did not become elevated. The bradycardia excludes the possibility of blood loss as explanation for the low blood pressure and symptoms twelve hours after operation. Over and over again we get confused between the differential diagnosis of pulmonary embolism and coronary occlusion. Pulmonary embolism may give a definite pattern of symptomatology. In a certain percentage of cases there are suggestive changes in the electrocardiogram, but the tracings suggest coronary occlusion. The secondary shock in a man of seventy who has arteriosclerosis of the coronary arteries may cause acute coronary occlusion. Whatever the trigger mechanism that precipitated the cardiac episode, a man who develops a sharp drop in blood pressure without evidence of blood loss, a cardiac rate of 42 and complete dissociation by electrocardiogram of auricular and ventricular rhythm must have a profound disturbance of cardiac conduction mechanism, presumably on the basis of coronary occlusion.

DR. DONALD S. KING:

Can you distinguish between abscess and tumor by the thickness of the wall and the shagginess of the wall?

DR. WYMAN: No, not in all cases. I think, as Dr. Davenport pointed out, that the thickness and contour of this wall together with the absence of the reaction about it, definitely favor tumor over an inflammatory process such as abscess. The two overlap, however, in certain cases and make it impossible to be certain.

DR. ALFRED KRANES:

Knowing the tendency of these tumors to metastasize to the adrenal glands, could you consider acute adrenal insufficiency as a pos-

sible mechanism for the hypotension following operation and the events that followed it?

DR. DAVENPORT:

I do not think I would consider it as a probability. I might consider some such mechanism in the development of the low blood pressure, in the absence of anything else to explain it. We have no evidence of adrenal disorder prior to operation, and it seems hardly likely that he developed such a condition within thirty-six hours of operation.

DR. KRANES:

Except that this degree of surgery might be enough to throw a person into acute adrenal insufficiency. He had no previous sign of it, and I do not think that one can make the diagnosis. It is just speculation.

DR. EDWARD B. BENEDICT:

I think it is worth pointing out why we did a bronchoscopy on a tumor that was obviously quite peripheral and beyond the reach of the bronchoscope. We did it because sometimes we can find tumor cells in the bronchoscopic washings when we have negative cytologic findings in the sputum.

DR. BENJAMIN CASTLEMAN:

In this case a cytologic examination of the washings showed definite tumor cells. Then Dr. Soutter took over.

DR. LAMAR SOUTTER:

There is one interesting point about the lack of surrounding pneumonitis. This patient had been on large doses of penicillin for a month prior to entry so that one could expect less pneumonitis than it usually found with an abscess. It might be questioned why anyone would do lung surgery on a patient of seventy who had emphysema. If he had a benign abscess it could have been drained, which would have been a simpler procedure than a lobectomy. But because we believed that he had a malignant lesion and was going steadily down hill, we thought it reasonable to do a lobectomy on this man to rid him of his sepsis. This procedure for a peripheral tumor has a reasonable chance of effecting a cure and is much safer than a pneumonectomy in older patients. We believed that he would withstand such a procedure but not a pneumonectomy. He was seen by a cardiologist, who thought that the heart was all right. The operation was long, and the dissection was difficult because of the inflammatory changes around the hilus of the lung. Toward the end he had a sudden fall of blood pressure accompanied by bradycardia. We discussed with the anesthetist as that time the possibility of adrenal insufficiency, which Dr. Kranes mentioned. We gave him neosynephrine, to which he had a favorable response. Postoperatively, when he again had a fall of blood pressure with bradycardia we thought of hemorrhage. But he had only a moderate amount of bloody fluid coming from his chest drainage tube. We gave him another transfusion, which did not affect his blood pressure. His bradycardia persisted. The cardiologist suggested that it was probably on the basis of myocardial failure. That is why an electrocardiogram was taken.

DR. RICHARD CLARK:

There were two tracings done before the final episode. These are of value, primarily as showing nothing of great significance and as serving as a base line. This is the one taken after the operation, and it does show more than is described in the protocol. There is a distinct depression of the ST segment in Lead 1 of approximately 1 mm., a distinct elevation of the ST segment in Lead 2 of approximately 2 mm. and distinct elevation of the ST segment take off in Lead 3, whereas in Leads CF_2 and CF_4 there is significant depression of the ST segments. The T waves themselves are somewhat obscured by the superimposed P Waves going with the auriculoventricular dissociation. I think this tracing is entirely consistent with an acute posterior myocardial infarction, which also involves the conduction system.

CLINICAL DIAGNOSIS

Carcinoma of lung right
Right lower lobectomy, recent.
Coronary thrombosis
Myocardial infarction, recent.

DR. DAVENPORT'S DIAGNOSIS

Bronchiogenic carcinoma.
Acute coronary occlusion.

ANATOMICAL DIAGNOSIS

(Squamous-cell carcinoma of lung.)
Operation: lobectomy.
Acute coronary thrombosis.
Myocardial infarct, recent.
Tuberculosis, old, bronchial lymph nodes.

PATHOLOGICAL DISCUSSION

Dr. Castleman: Dr. Soutter removed the lower lobe with a portion of two ribs to which the tumor was adherent. In the center of the lesion was a necrotic cavity surrounded by irregular and nodular, granular tumor. Microscopically

it was a squamous-cell carcinoma, Grade III. The regional lymph nodes showed no metastases, but there was old tuberculosis. The final affair, both as Dr. Clark and Dr. Davenport predicted, was an acute thrombosis of the right coronary artery. This vessel supplies the interventricular septum and posterior wall, which was infarcted. Microscopical examination of the infarct showed an extensive infiltration with leukocytes, such as one sees in an infarct about two days old. It would be interesting to decide whether this infarction could possibly have occurred before the operation or just before or even during the induction of anesthesia. I do not see how we can settle from the section of the myocardium whether it was thirty-six or forty-eight hours old. Certainly, it was within that range. The polymorphonuclear leukocytes were still well defined and had not begun to degenerate very much. The myocardial fibers themselves were granular and had lost their striations. We found no metastases anywhere in the body.



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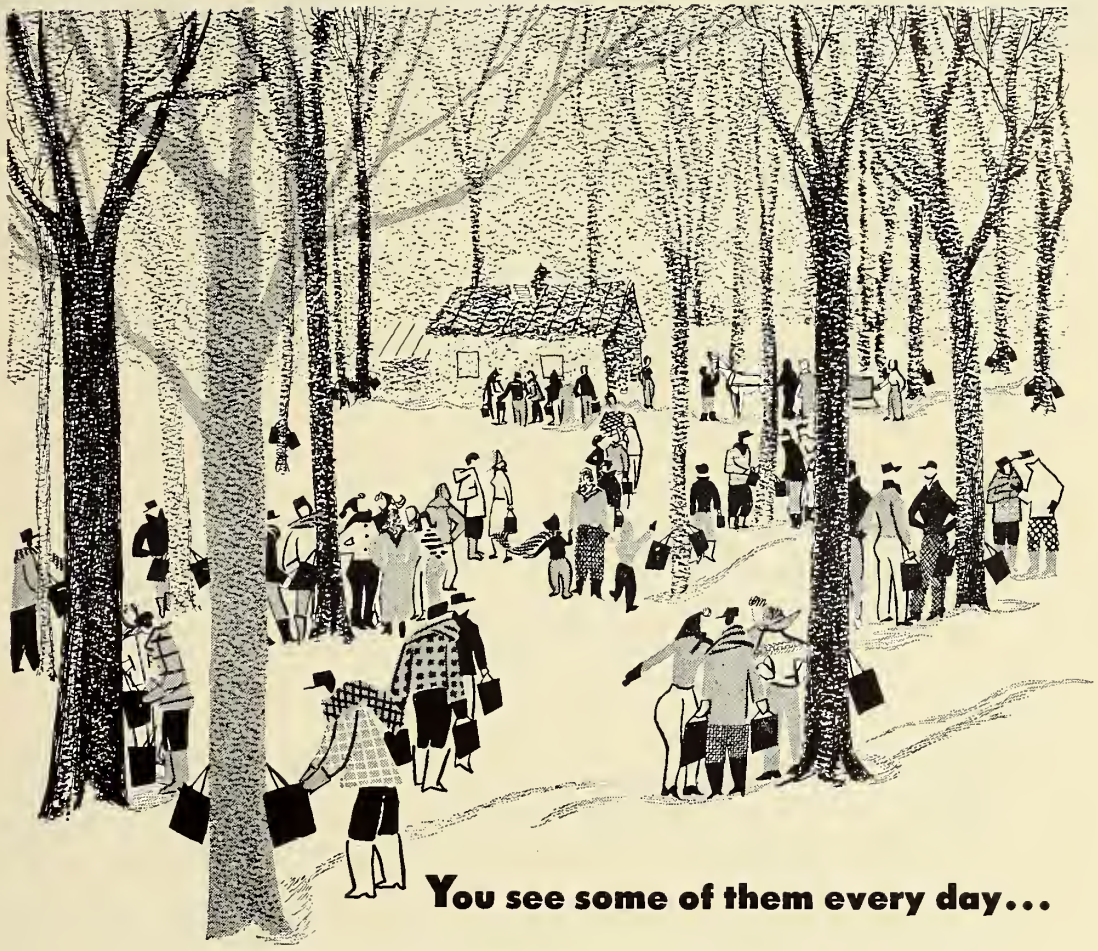
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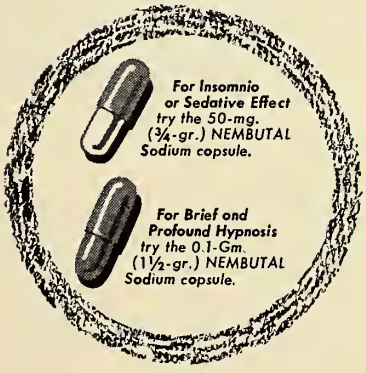
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THE *President's* PAGE

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Journal of
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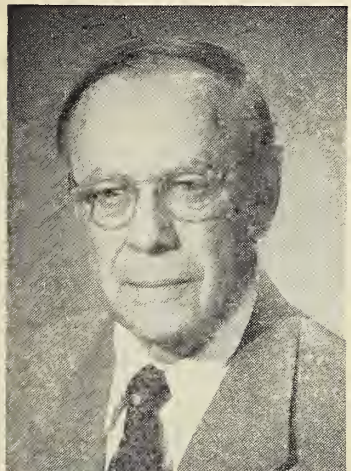
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PARDON US IF WE'RE PROUD



W. W. Watkins, M.D.

Surely no one can blame us if we point with pride when one of our pioneer physicians of the state and an associate editor receives special and well-deserved recognition. In the January 1954 issue of the Arizona Public Health News and reprinted in the February issue of the Arizona Health Digest is a very informative article about our associate editor, Dr. W. W. Watkins. Dr. Watkins came to this state in 1906 and has been very active in the medical affairs of the state since.

We quote from the article:

"His interest in Arizona's tuberculosis problem led him to take on the post of resident physician for St. Luke's Home, as the institution was called in its earlier days. Here at St. Luke's he began testing pathological material from tuberculous patients, introducing laboratory services to Arizona.

"So to Dr. W. Warner Watkins properly belongs the distinction of being founder of laboratory services in Arizona. Shortly after the laboratory was put into operation in 1911, Dr. Watkins volunteered to run Wassermann tests (for detection of syphilis) on all patients at the territorial insane asylum. The officials accepted his offer after dubious consideration, for nothing of this sort had ever been attempted. Test results showed that 60% of the mentally ill patients were positive to Wassermann tests and thus victims of venereal disease. 'That impressed them (the hospital authorities) so much,' Dr. Watkins commended dryly, 'that they decided to keep on with the work.' And at the request of the late Governor George W. P. Hunt, laboratory tests were also given to inmates of the prison at Florence.

"For several years the Pathological Laboratory operated by Dr. Watkins did all of the pathology work in the state, both for physicians and institutions. Dr. Watkins recalls his laboratory's role in controlling one major epidemic — the Malta Fever that struck Phoenix in 1922. This epidemic, which was traced to a herd of infected milk goats brought into the city, gained nationwide attention because it was the first outbreak of Malta Fever in a city in the Continental United States. Dr. Watkins worked closely with the Public Health Service, performing tests for Malta Fever, on every Wassermann specimen that entered his laboratory. These tests brought to light many more cases of the

CONTRIBUTORS

The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.
2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. (See MEDICAL WRITING by Morris Fishbein.)
3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.
4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.
5. Submit manuscript typewritten and double-spaced.
6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.

The Editor is always ready, willing, and happy to help in any way possible.

disease than could have been discovered otherwise. Dr. Watkins' report on the Phoenix epidemic was presented at the American Medical Association conference in Washington, D. C., on May 18, 1927, and was published the following November in the AMA Journal.

"Dr. Watkins is the author of many professional papers, more than 80 of which have been published in leading national and state medical publications. He has held offices in medical and scientific organizations and on special committees. In 1942, he served as chairman of the Committee on Silicosis, and out of this committee's investigations came the state's industrial disease law. As a result, industrial compensation is now given to victims of silicosis just as it is for accidents incurred on the job.

"Dr. Watkins is a past president of the Maricopa County and Arizona State Medical Associations. He is also a former president of the Medical and Surgical Association of the Southwest and of the Pacific Coast Roentgen Ray Society. He is a charter member of the American College of Radiology and holds honorary life membership in the Southwestern Medical Association. He is also a member of the Radiological Society of North America and the American Roentgen Ray Society.

"He served as editor of Arizona Health News during the time that Dr. E. S. Godfrey was public health superintendent (1908-1912). He also was editor of the Arizona Medical Journal when it was started in 1913. From 1922 to 1935 he was editor of Southwestern Medicine."

I'm sure our readers join us in congratulating Dr. Watkins on this recognition and extending our thanks for the many things he has done for the health of the people of the state.

SOMETHING NEW IN TAPE

THE problem of keeping up with the new advances in medicine is a real one for every conscientious physician. In his attempt to do so he invests great sums of money in medical magazines only to find all too often that he gets more of these than he can possibly read. He buys books with the best intentions of reading them and later finds himself rationalizing his purchase by pointing out their value to his library "for reference". Even the handsome informative brochures sent him by his friends the drug and medical instrument manufacturers receive his attention. Some of them he gets read; others have a way of accumulating at his bedside or on his desk waiting until he gets time to go over them. He is sometimes embarassed when one of his patients asks him about some new treatment reported in some popular news magazine. It matters not that the publication may have been premature and the treatment not yet available or sufficiently tested for general use; in the eyes of his patient he is behind the times. So he subscribes to the news magazine.

Naturally then the physician welcomes any device which offers him any way out of this morass, and several devices are available. The various abstract services fill a definite need. Year books are published to collect in one easily read volume the important medical developments of the year. Moving pictures of latest operative technics and treatment methods are available. Perhaps one of the most successful and practical methods of dissemination of such information is through the post graduate courses offered by teaching centers and the various professional groups. All of these things have their advantages and disadvantages — the perfect method has not yet been found.

It is encouraging therefore to see the institution of a new idea along this line which seems to offer certain obvious advantages. The American Medical Education Foundation has endorsed an "Audio-Digest" service which is offered by a non-profit subsidiary of one of our sister state medical associations. Abstracts of twenty to thirty current scientific articles are made into one-hour tape recordings and sent out monthly to subscribers. These at present are available as general practice digests as well as digests of several specialties. Lectures either with or without illustrations on film strips are also available. Since ownership of tape recorders is expanding rapidly, this seems to us an interesting idea. Imagine being able to listen to a recent, up-to-date lecture by Professor Doe at your convenience, as for example while driving in your car making calls, or reclining in your favorite heart-resting easy-chair at home. After you've thoroughly digested the material the tape may be erased and used for recording the childrens' voices, a symphony from the radio, or your own voice for transcription by your secretary.

One of the best things about this service and the one which really inspired this writing is that any profit which accrues will be devoted to the cause of medical education through the National Education Foundation. The surprising thing is that it costs no more than blank tape as you buy it for your recorder.

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TOPICS OF *Current Medical* INTEREST

RX., DX., AND DRS.

By GUILLERMO OSLER, M.D.

WHAT is the NEW POLIO VACCINE? The simplest description for your office, club, and social questioners (in case they don't tell you first) is as follows,—It is a combination of three types of polio virus, inactivated by formalin, so that it can no longer infect but can still produce antibodies. . . . Three 'shots' are to be used, the first at an interval of two weeks, the second 'several' weeks later. . . . The gamma globulin was a good idea (1952-53), but is now abandoned. . . . The new vaccine is said to be safe.

A brand new word which promises to have a more common use is 'SCINTIGRAM'. 'Scintography' involves the use of a 'scintiscanner', a gamma ray detecting device which plots the concentration of radioactive tracer agents in such tissues as the liver and the gall-bladder.

Here are two more new terms, dependent on new substances and methods,—'TELETHERAPY' and 'BRACHYTHERAPY'. The cue to what they mean could come from a recent program note which said that the speaker on those subjects was from the Oak Ridge Institute of Nuclear Research.

Increased incidence of sensitization to PENICILLIN is naturally followed by attempts to decrease it. . . . Alexander of Dallas says that DESENSITIZATION may easily be done. He mentions the need to help nurses who are sensitive, the necessity to prepare patients who have a chronic infection, and a prophylactic preparation of those who may need the drug at a later date. . . . The ease and speed of the procedure depend on the degree of sensitivity. If severe, an initial dose of 2 units of aqueous penicillin may be enough; in others 50 units may be used. The dose is repeated every 3 hours, doubling on the second day, doubling again on the third, and so on up to 200,000 units without reaction. . . . If a delayed action penicillin is used, 30,000 units (0.1cc) can be given as the first daily dose, with an increase of 0.1cc per day up to 1.cc, and 0.2 per day after that to a total of 2cc.

The USPHS reported the value of combined isoniazid and PAS for tuberculosis, and it seemed very good news in December 1953. . . . Here now, begorrah, we find that in November a report was in the 'IRISH JOURNAL OF MEDICAL SCIENCE' of a similar finding by Breathnach. The Ould Sod may not be quoted well enough, so we'll surely keep a quicker eye on the state of things in Dublin and Gloccamorra.

We have always felt that one of the chief AIDS TO ASTHMATICS which Arizona provides is the partial reduction of several allergens. Almost always there is less housedust, less pollen, less infection, less molds than there is in the northeast. . . . Now a good name for this comes along, "THE ALLERGIC LOAD". Anderson and Rubin write about it in the Archives of Otolaryngology. . . . The sum total of the contributory and exciting factors makes up the allergic load. The patient must be considered as a whole. . . . Certain conditions increase the load, including smoking, anemia, sex hormone effects (menses, etc.), and psychosomatic influences. . . . Good term.

A new method rarely has such favorable reports as the socalled 'ANTIBIOTIC BONE BANK' in the U. S. Air Force. Favorable and perfect. . . . Bone is preserved in a refrigerated saline solution containing penicillin and streptomycin. . . . "One hundred grafts have been done. There have been no infections. All bone preserved by this method and used as a graft has integrated". . . . Terrific, without even a concession to luck or accident.

Another BONE AND JOINT procedure, feared and uncommon even a dozen years ago, is 'needling' of a joint. . . . To show the progress in the safety of aspiration (plus the instillation of hydrocortisone) the huge series of Hollander at the Univ. of Penn. can be quoted,—852 patients with a variety of rheumatic diseases had 8,693 intrasynovical aspirations and instillations. . . . A dividend is the effect of the cortisone, with an average of 83% being called successful. The knee does best; the hip and the subdeltoid bursa do most poorly.

A large series of PULMONARY "COIN" LESIONS (362) has come to surgery at the hands of Storey, Grant, and Rothmann. About one-third were shown to be malignant. . . . This is strong evidence in favor of thoracotomy and resection. It is also certain that delay is not justifiable. . . . The hazards of thoracic surgery are now so small that only expense is a factor. . . . (This would be a place to put in a plug for voluntary health insurance, in spite of our distress at the exclusion of certain illnesses).

A relatively new (and good) technic for ANAESTHESIA of the respiratory passages before BRON-

NOT FOR PROFIT

THE HOSPITAL BENEFIT Bulletin

Special Published Bi-Monthly by the Hospital Benefit Association, First Street at Willetta, Phoenix April, 1954

Excellent Article On Health Plans in "Medical Economics"

If you still have your February, 1954, copy of "Medical Economics", don't fail to read the article beginning on Page 199 entitled, "The Challenge of Voluntary Health Insurance". The writer is Ralph J. Walker.

Of basic interest is the explanation of different types of plans: the "one-doctor" plan with a fluctuating pre-payment fee; the group of physicians whose plan is administered by a paid manager (which often stems from a "one-doctor" plan); the type of plan, now in wide use, where doctors must reduce charges when reserves are inadequate; and the insurance-type plan which guarantees payment to physicians.

One fact is clearly shown. Somebody has to pay for patients' medical care . . . and often it's the physicians, themselves.

If you haven't already read this article, be sure to do so. It's interesting, educational and brief.

HBA PROMOTES AMA TELEVISION SHOW

Believing the "March of Medicine" series of television shows to be an outstanding public service, the Hospital Benefit Association used its advertising facilities to help create interest in the most recent showing, which was March 11th.

A four-inch ad on the TV page of both Phoenix newspapers was devoted to promotion of the "March of Medicine." In addition, the audience of "The Visitor", HBA's own show which immediately preceded the AMA show, was urged to stay tuned for the "March of Medicine."

BBB BOOKLET GIVES M.D.'s FACTS ABOUT HEALTH INSURANCE

An excellent booklet, "Facts You Should Know About Accident and Health Insurance," published by the Better Business Bureau, can be of great help to physicians when patients have "insurance problems."

The booklet outlines simply and understandably just what should be reasonably expected from health insurance plans, and points out why certain limitations should be expected.

A single reading of the BBB booklet will provide a liberal education on health insurance. When your patients have questions regarding insurance, you will be glad you have this information.

This booklet is available at the Better Business Bureau for 10c per copy, but we will be happy to save you the dime and the trip to the BBB office. Simply clip and mail the enclosed coupon, and we'll send you the "Facts" booklet without charge or obligation.

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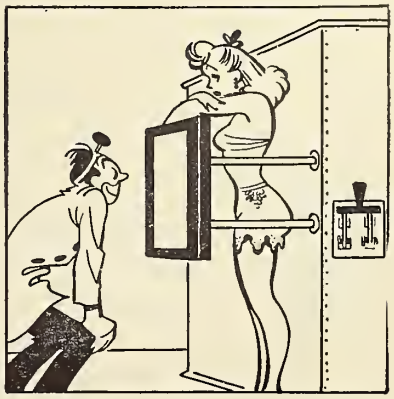


UEL CLAY BOBBITT

Uel Clay Bobbitt, a prominent Phoenix certified public accountant, has been a member of the Board of Directors of the Hospital Benefit Association since its founding in 1944.

Born in Iowa, Bobbitt moved to Arizona in 1919, after graduating from the College of Emporia in Kansas and serving in the Army.

In 1941, Bobbitt was certified as a public accountant, and has had offices in Phoenix ever since. He is a past president of the Arizona Society of Certified Public Accountants, and has been a long-time member of the American Institute of Accountants.



Have you found what's causing my earache, doctor?

CHOGRAM is now in use. A cocaine-like preparation (Xylocaine) is inhaled in the form of an aerosol. The aerosol may be produced by any sort of nebulizer-plus-pressure. . . . The completeness of local anaesthesia is amazing, and catheterization of the bronchi produces little or no cough reflex. This, as you may remember from past attempts, (unless you are an orthopedist or ophthalmologist), should remove the chief barrier to placing the oil exactly where you want it. . . . The procedure allows one to use less oil, but also requires only 1 or 2cc of the Xylocaine.

A Dr. Ralph Gaucher from northern California has written a humorous essay which may reach you in the daily papers before you see it here. He calls it "THE PILLAPARAPROB", which means 'the pill which parallels your problem'. . . . The idea came to him when he was given a sample pill with a quick acting exterior and a slow acting interior. Why not a pill with multiple layers which could be timed to needs?! "After all, man isn't a simple mechanism with ONE need. He might need more bile now, more sleep later, a pat on the head tonight, a kick in the pants tomorrow morning". For every problem a layer of drug! . . . His "week-end pillaparaprob" contains pepsin, benzedrine, Spanish fly, seconal, benzedrine, soda bicarb, cascara, etc., etc. . . . You can figure out the uses of the various layers yourself, just like the readers of the newspapers. The original article in a medical journal was explicit, but the public prints probably won't be.

Seven or eight years ago Dr. John Barnwell mentioned, during a visit to Tucson, that he was about to start on the apparently hopeless task of getting A CHEST X-RAY on all of the employees of the V.A. He heads the TB section. . . . That gleam in his eye has reached the point where a recent report says that the VA has screened 3,217,000 persons for TB in the past 4 years. The figure includes 2,513,000 patients and 704,000 employees. . . . Active pulmonary TB was found in 12,740 and inactive in 34,470! Nearly 91,000 other chest abnormalities were also discovered. . . . Viva Juan!!

'HOSPITAL TOPICS' describes the newest CO-OPERATIVE DIAGNOSTIC-SCHEME in "Specialists on Call". . . . Nine hospitals in Kansas and Colorado are connected by a leased-wire AT&T communication system. The hospitals range in size from 24 to 120 beds, except for the consultant hospital in Wichita. There is a teletype in each. . . . The small hospitals couldn't afford resident specialty opinions, such as a pathologist, and when specimens were sent away the reply was delayed a week. . . . Dr. W. J. Reals conceived the hookup, and the needy hospitals (sectarian and non-sectarian) rushed to implement it. The current surgeon-to pathologist-to surgeon, by way of airmail, special delivery, and teletype is less than 24 hours. The teletype is used for other hospital needs, including a purchasing service, exchange of information, etc.

Briggs, Walters, and Byron of Los Angeles have demonstrated that, if an intrapleural catheter attached to a water-sealed bottle is used to treat SPONTANEOUS PNEUMOTHORAX, the lung will be expanded in an average of three days. . . . If a needle and water-seal are used it requires 29 days; if aspiration is used, 22 days; if bedrest only is used, 34 days. . . . The technic is simple, but a chest surgeon is best qualified to do the job. . . . (The way by which this trio of authors began practice together also makes a story. They all worked for a VA hospital 5 years ago. They all wanted to go into private practice. The only way to do so was by construction of a new building. It would cost $250,000. One of the three surprised the others by saying "I'll build it." . . . It just happened that his FAMILY builds bodies for automobiles. You can figure who it was by looking at the names of the authors).

WORKDAY OF THE SOVIET PHYSICIAN*

Mark G. Field
Cambridge, Massachusetts

THE lot of the Soviet physician is not a happy one as judged from a long and detailed study recently published in the Soviet Union by the *Literary Gazette*, the influential and official organ of the Union of Soviet Writers. Entitled "Hours and Minutes of the Physician," the article reveals several grave shortcomings in medical work.

In the first place the patient load is so great that not even the *official* norm of 10 minutes for each can be observed by the physician. Thus, in 2 cases reported as typical, a physician saw 22 patients in 3 hours, and another saw 26 in 3½ hours. Needless to say, careful examination and even civil conversation with the patient are almost impossible. This time is further whittled down by the tremendous amount of paper work that must be done in the form of endless forms and statistics. Thus, of the 180 minutes spent by the first physician, 33 were devoted to listening to and examining patients (an average of one and a half minutes per person), 9 in measuring blood pressure, 56 in reading and filling in case histories and the rest, or about half, on paper work.

In a typical polyclinic, every month doctors must supply statistical figures, and every six

*Reprinted from the New England Journal of Medicine, Feb. 4, 1954.

months the polyclinic turns in a table that is 4½ feet long and contains 87 charts and 700 figures. No one, however, has been able to provide a satisfactory explanation of the use of these statistics by the Ministry of Health.

Furthermore, as a result of an order issued in 1949, physicians must work in inpatient and outpatient departments; this has meant an increase in the number of hours spent at work, and the typical day of the Soviet doctor is from 8 a.m. to 6 p.m. This has also led to a daily run from polyclinic to hospital and vice verse, with every physician overworked and watching the clock. In addition, almost every evening the physician must attend lectures or meetings for 2 more hours. Returning home at 8 p.m., he must complete the paper work not finished at the office. This takes an additional 2 hours. Since the majority of doctors are women, there is little time left for housework or for care of children.

Nor do doctors have enough time to carry on research work based on their daily routine, or to keep up with the medical journals. Physicians are also "borrowed" by the local organs of health for various assignments, thereby increasing the load on the other physicians, and many an experienced practitioner is put permanently behind a desk, where he has no chance to perform the work for which he was trained. Furthermore, the medical districts, which were originally designed to service 4000 people, now have 5000, 6000 and even 7000 people registered so that the lines in front of the doctors' offices are growing longer and longer whereas the number of doctors assigned to these districts has remained approximately the same. Medical propaganda has convinced the population to go and see the physician "at the smallest discomfort." This further increases his load. It is thus doubly impossible for the physicians to enact prophylactic measures and to keep the entire population under observation as they are urged to. The authors of the article propose several measures to remedy the situation.

A month later, the *Literary Gazette* published a resume of letters that had been sent in by readers in response to the article. Most of the letters confirmed the impression that the situation described was not a unique phenomenon, but typical of the entire Soviet medical setup. Letters particularly criticized the "paper flood" to which the doctor was subjected, emphasized the necessity of a careful examination and the value of conversation between patient and doctor, stating that "a psychotherapeutic talk sometimes has more effect than a spoonful of medicine," and urged a revision of the official 10-minute norm. Suggestions were also offered to keep physicians working for long periods in either inpatient or outpatient departments. Finally, the question of material rewards was broached. Doctors should receive more pay, their vacation time should be extended from 12 to 24 days a year, the Government should be more careful in seeing that the physicians get social recognition in terms of medals and orders, and finally the work and the life of the doctor should be improved to provide, in turn, for better care and health of the Soviet population.

The frankness of this criticism, unusual for a Soviet publication, may well indicate that the problem of the position and the work of the Soviet physician will receive more attention from the Government. Whether this will result in any appreciable improvement of his lot is still to be seen.

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Interesting TOPICS

DR. JACK WITTEN (North Tazewell Va.) AND HIS 'BOYS'

THE work of Dr. Jack W. Witten of North Tazewell, Va. with under-privileged boys has again come into the national lime-light. This work is unique in many respects. In the first place, it is a one man job, carried on for forty years, without appeal to the public for funds, and that alone should make it unique. It has been carried on by a busy general practitioner who is, in addition, a well known member of the Virginia Legislature. The latest writeup of Witten's "hobby" is in Medical Economics of March, 1953, page 139, with several excellent photographs, to which any one interested is referred for details.

The reason for this "plug" is two-fold. The writer was probably the first of the long series of "boys" influenced and stimulated by J. Walter Witten, as he was called back in the early days. Influenced by him during premedical school days, I changed vocational plans and entered the Medical College of Virginia at Richmond, Va., one year after Witten. We two young doctors came to Arizona together in 1906, but our plans to practice together did not turn out as anticipated and Witten went back to Virginia. He came back to Arizona about 1910, accepting position as assistant to Dr. Murietta, then chief surgeon for the United Verde Hospital at Jerome, Ariz. When Murietta left Jerome, Witten also resigned and returned to Virginia about 1913, starting his long years of service to community, state and country,—including his work with boys. Service in World War I in France has been the only interruption to his practice and "raising boys", except the service in the State Legislature, to which office he is periodically re-elected on a non-partisan ticket. He probably has enough "graduates" of his unofficial boys' home scattered through Virginia to elect him governor of the state, should he desire this. But he does not. He is satisfied to render service to his community, to see his boys grow up into honorable manhood and successful vocations. Truly a faithful servant of good works. Arizona, as well as Virginia, should be proud of him. — W.W.W.

HOW ABOUT HAWAII?

Many otherwise well informed citizens know little about Hawaii. Just ask your postmaster how often they hear the inquiry, "What is the postage rate to Hawaii?" Those who ask evidently still do not realize that Hawaii is a part of the United States, and the postage rate is the same as to any other part of the U.S. The same is true of Alaska. When the politicians get through kicking the matter around as a political football, both Hawaii and Alaska will take their places in the roll of States. Thus the Weinerman Report on the "Public Health and Medical Care in Hawaii," is timely and interesting. This is a 182-page report and has been summarized in the Hawaii Medical Journal of January-February, 1953.

"In general, the fine health record of the Territory and the achievements of its modern public health and medical care programs deserve the recognition and commendation of the rest of the country." — W.W.W.

TOXIC EFFECTS OF PHENYLBUTAZONE

(Butazolidin). Two articles by Nissim and Pilkington and J. C. Leonard, in British Medical Journal, June 13, 1953, stress the dangers of using this drug carelessly and without frequent (daily) observation of the blood condition. One of the authors says it should be limited to hospitalized patients. There is a strong temptation to be careless in the use of Butazolidin, because of its effectiveness,—but the very conditions in which it is most effective are also those in which it is most dangerous,—the recurrent types of arthritis (rheumatoid and gouty),—the danger being in the temptation to prolong the administration or repeat it frequently.

If you want to use Butazolidin, remember these dangers and guard against them by frequent blood examinations, keeping the dosage at the minimum which will produce the desired effect, and limiting the length of time over which the drug is administered. W.W.W.

Organization PAGE

Medical Organizations and Lay Medical Groups are invited to submit news for this page to Norman A. Ross, M.D., Professional Building, Phoenix, Arizona.

On this page will be reported activities of lay and medical organizations that are a part of the physicians' citizenship responsibility.

HEALTH INSURANCE COUNCIL'S " ACCIDENT & HEALTH COVERAGE IN THE UNITED STATES"

(From the Editor's file for this page)

ANNUAL SURVEY – SEPTEMBER 1953

"THIS survey reveals the number of persons protected at the end of 1952 by all types of voluntary health insurance plans, including those underwritten by insurance companies, Blue Cross, Blue Shield, and other types of organizations providing accident and health protection."

VOLUNTARY HEALTH INSURANCE – 1952

Plan	Hospital	Surgical	Medical	Loss of Earnings
Insurance Plans	51,714,000	48,817,000	15,275,000	38,000,000
Blue Cross Plans & Plans Sponsored by Medical Societies	43,475,000	27,773,000	18,321,000	
Independent Plans	5,364,000	4,794,000	5,150,000	
GRAND TOTAL	100,548,000	81,384,000	38,746,000	38,000,000

Additional Persons Protected:
Compulsory Plans 10,000,000
(Indigents and Pensioners; Specialty Coverage, Industrial, and Accident, not determined)

MAJOR MEDICAL EXPENSE (Deductible Catastrophy, Health and Accident Insurance, a program based on the standard automobile collision policies.)
700,00 policies in this new deductible program—insurance up to $10,000 maximum, paying for hospital, surgical, and medical expense of any and all individual illness or injury.

ANSWER THESE QUESTIONS:

Where's the saturation point? What are the duplications? Where is this year's increase? Can the new "major medical expense" programming continue its phenominal growth? What are its limitations? What will be its effect?

WRITE TO:

Health and Accident Underwriters Conference
208 South LaSalle Street
Chicago, Illinois

This survey is free. Ask to be placed on their mailing list for the 1954 issue.

ARIZONA *Pharmaceutical* PAGE

YOUR FUTURE!!!!

YOU, doctor, are building the foundations for all of your future, in your movements today. We are all doing that and, certainly, it behooves each one of us to honestly analyze some of our actions and our suggestions.

I am going to be brutally frank in stating that the members of all of the health professions are constantly being subjected to the merciless scrutiny of the hard-earned dollar. It has become a familiar adage to have our patients and customers complain about the exhorbitant prices being charged by Doctor Blank, Druggist Jones, Nurse Smith, Dentist Brown or any of the hundred and one others who deal in the health of the public. We have complaints about the charges on hospital bills, rest homes, etc. Last evening I read an extremely derogatory article in the Veterans of Foreign War Magazine, excoriating the members of the American Medical Association for their stand on medical services to the past members of the armed services, through the Veterans Administration. This is only one instance. There are hundreds of others every day. WHAT DOES IT ALL ADD UP TO?

You, doctor, together with the rest of us are adding to that picture every time we endeavor to explain to inquiries in a manner detrimental to the members of any of the other professions. You tell John Jones you will shop around among the various pharmacies in his city and find which of them will fill his prescription the CHEAPEST. Doctor this is not fanciful at all. It is happening today and every day. It happened last week in the city of Tucson and we have documented proof of it to substantiate our statements. Its really a deplorable situation you all should take cognizance of and endeavor to remedy within your own ranks. Entirely too many of you AND OF US advise our patients and customers on matters not relative to their treatment.

Pharmacists throughout the country are beginning to believe they will be forced to retaliate in kind and, believe me, it is a situation demanding immediate attention. It would be a most unfortunate happening to have members of the health professions pitting themselves against each other merely to save those dealing with them a pittance on their medical costs. Certainly much goes into a visit of a patient to the office of a physician that must be paid for. It would not behoove a pharmacist in recommending a physician to tell that future patient that doctor so and so only charges $2.00 for an office call and $3.00 for a house call with the further inference that anyone charging more than that amount is a robber and should not be trusted. I don't believe you would ever want that to happen would you? Conversely doesn't the same hold true when you tell your patient to take his prescription to a particular drug store because you have been inquiring around and find that store to have the CHEAPEST medicine in your locality.

What is your future? Together ALL the members of our health services have added much to our present status. Together we have been able to successfully stand off any attempt to bring about the socialization of medicine and medications. I have written this article very frankly and would like to have you consider it on the most friendly basis. We have a problem, brought about by the particularly high prices of our current medications, which demand solution not on the basis of dollar consideration but upon the basis of the general welfare. Continued denouncements will only lead to unpleasant relations and it is my prayer that we shall all recognize the status of those with whom we are working.

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CRIPPLED CHILDREN IN ARIZONA

George A. Williamson, M.D.
Phoenix, Arizona

ONE of the most gratifying programs under the supervision of the Department of Public Welfare is that which deals with the care of crippled and handicapped children. Starting with the premise that "every child should have a change to lead a normal, useful, productive and healthful life" there are no limits to which we should restrict ourselves in attaining these aims.

The program is handled through out-patient clinics, hospitalization, and convalescent care in Tucson and Phoenix by a staff of orthopedic surgeons, consultants in all the various specialties in addition to a closely knit organization of non-medical and administrative personnel. Field clinics are held in various locations in the state so that new cases can be examined and old cases reviewed to determine the adequacy of the treatment and the need for further care. These clinics make it possible for many needy patients to have examinations and adjustments made on their appliances and braces without having to make the costly trips to Phoenix or Tucson.

About 2000 children are registered for the Crippled Children Services in Arizona and this figure does not include the crippled children from the many Indian tribes who reside within our State boundaries.

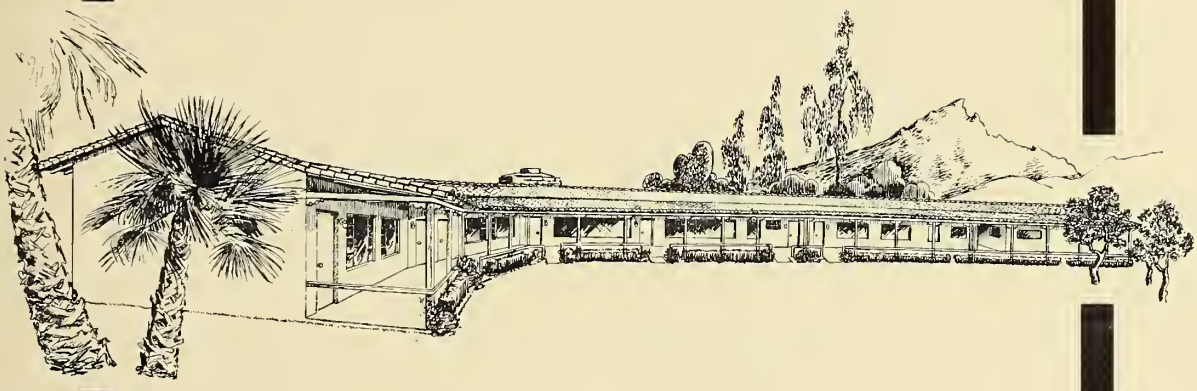
During the past year approximately 400 children were admitted to the Phoenix Treatment Center. The percentage of occupancy of the beds at the Center was 96.63 indicating the efficiency with which all available space is being utilized. The average length of stay in the Treatment Center was 44.6 days. Maintaining an active turnover of patients makes it possible to give service to the greatest number. Children are returned to their homes as rapidly as possible so that parents continue to realize their responsibilities for the home care and supervision of the child's welfare. Approximately 10,000 physiotherapy treatments were administered at the Center in the out-patient and in-patient departments. The cost of operating this program is between $305,000 and $315,000 with approximately $15,000 to $25,000 being paid by reimbursements. It is essential to maintain this program in a healthy energetic condition so that adequate funds must be made available. Last year $268,000 was received for the operation of the program but with expansion of various phases additional funds are needed — an appropriation of $295,000 is being requested from the legislature next year.

The program of crippled children care is restricted so as to exclude all reservation Indians. These children are wards of the Government and are referred to the U. S. Indian Service for care. Through the understanding and cooperation of the Indian Service it has been possible to afford a fairly satisfactory program of care for them. Two clinics are held each year in the northern part of the State where children are brought by the nurses, teachers, and social workers who are serving with the Indian Service on the reservations. Those needing treatment are listed and arrangements made for their care. Some of these children are sent to the Shriners Hospital in Salt Lake City or to a hospital in Chicago, but the majority are brought to the Phoenix Medical Center (Indian) Hospital as beds are available. Efforts are being made to expand the services which are available as rapidly as possible. Many new clinics are being planned for this next year to reach out onto the reservations of the Pima, Papago, Apache and other tribes. We have been struck rather forcibly by a chance phrase to the effect that "Indians are people, too" and are subject to the same disabilities, diseases, and deformities as their white neighbors. A resolve to reach out into their remote and primitive homes with a helping hand makes the work among them stimulating and rewarding.

It would seem that the work of the Crippled Children Program could be further improved by the enlargement of the school program at the Treatment Center. The construction of additional facilities so as to make the necessary surgical treatment available at the Center would eliminate the necessity of transfering children to other Phoenix hospitals for this phase of their care. It would seem advantageous to provide a program of complete care under one roof as is done in many other states.

The enthusiastic working together of the orthopedic surgeon, physician, social agency, and an intelligent, cooperative legislative group is necessary for the proper care of crippled or handicapped children. When optimum efficiency in the relief or care of those, crippled by conditions amendable to orthopedic treatment has been attained we can finally direct our attention to the next great problem — prevention.

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The American Congress of Physical Medicine and Rehabilitation

The 32nd annual scientific and clinical session of the American Congress of Physical Medicine and Rehabilitation will be held September 6-11, 1954, inclusive, at the Hotel Statler, Washington, D. C.

TAPE RECORDED POSTGRADUATE SERVICE AVAILABLE

NATIONAL distribution of a new means of communication for medical learning has been undertaken by the California Medical Association through its recently-formed non-profit subsidiary, Audio-Digest Foundation.

Using tape recorded material, the Foundation makes available to doctors everywhere three "postgraduate services" designed to save their time while increasing the scope of their practice-useful knowledge.

The basic service is the weekly issuance of a one-hour tape for general practitioners, on which are recorded from 20 to 30 abstracts of the best in current medical literature embracing all fields. These articles are screened by a board of medical editors of which Edward C. Rosenow, Jr., M.D., Pasadena, is editor in chief. As a corollary service, Audio-Digest offers semi-monthly digests in the fields of surgery, internal medicine and OB-Gyn. The third service is tape-recorded lectures and panel discussions on one-hour reels for individual or group purchase. Many of these lectures are illustrated by film strips made from the speaker's own slides and cued by him in the recording.

"One of the most appealing factors about these services," Dr. Rosenow said, "is that they are of definite, practical value to the physician. Much of the literature digested would not ordinarily come to the busy practitioner's attention. And the advantages of hearing world-renowned authorities in medicine and surgery at your own hospital staff meetings or in your own living room are obvious."

Dr. Rosenow added that reserve funds accruing from the distribution of these tapes are specifically earmarked by the California Medical Association for distribution among the nation's medical schools, possibly through the AMA's National Education Foundation.

Headquarters offices for Audio-Digest Foundation are at 800 North Glendale Avenue, Glendale, California. Mr. Jerry L. Pettis is Executive Vice President.



THE AMERICAN NATIONAL RED CROSS



The major purpose of the Red Cross is that of serving humanity's needs in disaster in the community, the nation and the world.

This agency advises that its closest alignment with the medical profession is in teaching first aid, a program developed and constantly under revision by the American Medical Association.

Then, too, there is the gamma globulin program of the Red Cross, conducted at the request of the American Medical Association, supplying doctors with gamma globulin used in measles, polio, and hepatitis.

This agency serves all races and creeds. The Red Cross reaches each and every county in Arizona.

THE ARIZONA SOCIETY FOR CRIPPLED CHILDREN AND ADULTS, INCORPORATED, 207 Arizona Title Building, Phoenix, announces **regional itinerant clinics** in Pinal County at Coolidge April 4, and Mohave County at Kingman April 25, 1954. Physicians are invited to attend or refer their patients. Of the 465 children examined in these clinics to date 156 have been cerebral palsy cases.

Posture Clinics in Tucson's three junior high schools have located 280 children who can profit by a concentrated correctional program. Of these 115 are now under the prescribed treatment. This program is to be applied state-wide.

RELATING TO DEAD BODIES TISSUE, EYE, BONE, CARTILAGE OR BLOOD BANK

YOUR Association sponsored a measure for the donating or bequesting by any person of his body or any part thereof for the purposes of medical science and the rehabilitation of the maimed which became Senate Bill No. 42, introduced in the Senate of the Twenty-first Legislation of the State of Arizona, Second Regular Session. It provides:

"Any person who may otherwise validly make a will in this state may by will or other written, signed and acknowledged instrument dispose of the whole or any part of his or her body to a teaching institution, university, college, state department of health, facility designated or maintained by the anatomy board of Arizona, legally licensed hospital or any other agency or commission operating a tissue, eye, bone, cartilage or blood bank or any other bank of a similar kind designated for the purposes of medical science and the rehabilitation of the maimed.

"Persons so donating or bequeathing the whole or any part of their bodies under the provisions of this Act may designate the donee or may expressly designate the purpose for which his or her body, or any part thereof, is to be used, but such shall not be necessary. If no donee is named by the donor, then any hospital in which the donor may depart this life or any available doctor of medicine or medical surgeon shall be considered the donee and have full authority to take the body or the part thereof so donated and to transfer such body or part thereof to any depository referred to in section 1 of this Act for the purposes designated by the donor and if no such purpose has been designated, then for purposes in accordance with the intention of this Act.

"No particular form or words shall be necessary or required but any signed and acknowledged written instrument or any last will and testament or codicil shall be liberally construed to effectuate the intent and purpose of the persons wishing to donate their bodies or any part thereof for the purpose elaborated in this Act.

"Subject only to any provision of law relating to medical examination or autopsy of dead human bodies, any provision in any signed and acknowledged written instrument or last will and testament or codicil which donates the body of the donor or testator or any part thereof as provided by this Act shall become effective immediately upon the death of the donor or testator and the authority for any hospital, physician, or surgeon to remove said body or any part thereof shall be such signed and acknowledged written instrument or such last will and testament or codicil.

"Any statute to the contrary notwithstanding, no person, association or corporation shall be subject to liability for any act performed in carrying out such instructions of the donor or testator."

Declared an emergency, this Act passed both bodies of the Legislature and was approved by the Governor February 27, 1954, becoming Chapter 6 of the Laws of the State of Arizona—1954, amending Chapter 43, article 52, Arizona Code of 1939, by adding sections 43-5202a, 43-5202b, 43-5202c, 43-5202d and 43-5202e, and is now effective.

AN INVITATION

An invitation has been extended to all auxiliary members to attend the Thirty-first annual meeting of the Woman's Auxiliary to the American Medical Association which will be held in San Francisco, California, June 21 to 25, 1954. Headquarters will be at the Fairmont Hotel.

Woman's AUXILIARY

WHY THE "BRICKER AMENDMENT" IS IMPORTANT TO THE MEDICAL PROFESSION*

THE controversy stimulated by the amendment to the Constitution proposed by Senator Bricker and 63 of his colleagues has spread to every segment of our population, including the medical profession. The American Medical Association has received a number of letters from physicians during the past few weeks expressing various sentiments concerning the proposal. Some endorse the amendment wholeheartedly; others have deplored the intervention of organized medicine in what they consider to be a nonmedical issue; still others have requested additional information defining the threat to our system of medical care posed by our present method of negotiating and ratifying treaties.

On January 7, 1953, Senator Bricker and 63 co-sponsors introduced S. J. Res 1, 83rd Congress, which proposed the adoption of a constitutional amendment limiting the treaty-making authority. This resolution was referred to the Senate Judiciary Committee together with S. J. Res. 43 (sponsored by the American Bar Association). On June 15, 1953, the committee submitted a favorable report on S. J. Res. 1, with amendments, and recommended that it be adopted. The amended version of the resolution, as approved by the committee, stipulated that any provision of a treaty that violated the Constitution would be invalid and that the treaty power could be used to establish or modify internal law in the United States only through the enactment of domestic legislation that could have been adopted in the absence of such treaty.

In tracing the interest of the medical profession in the Bricker amendment, it is important first to recognize the fact that treaties become the supreme law of the land if ratified by two-thirds of the Senate present and voting. In addition, it must be noted that significant changes have occurred during the past few years in the scope of treaties and executive agreements negotiated by the executive branch of the government. Although these instruments formerly involved only international matters, there are now pending treaties or executive agreements whose ratification would change our domestic laws.

In the health field three specific situations can be explored. They deal with the activities of the United Nations treaties of friendship with other countries and the conventions of the International Labor Organization.

The United Nations Charter, which was ratified in 1945, has two general sections that lay the framework for broad treaty provisions in the field of health.

Article 55 provides in part: "The United Nations shall promote solutions of international, economic, social, health and related problems."

Article 56 provides that "all members of the United Nations pledge themselves to take joint and separate action in cooperation with the organization for the achievement of the purposes set forth in Article 55."

Agreements and treaties negotiated pursuant to these provisions could fundamentally change medical practice in this country if ratified by two-thirds of the Senate present and voting.

The second example deals with a series of friendship treaties that were before the Senate this past year. These include treaties with Denmark, Holland, Israel, and Greece, which dealt with immigration quotas, citizenship requirements, and matters of professional licensure in the various states. If these treaties had been ratified as originally prepared, some of the requirements of the state medical licensing boards would have been abrogated.

The International Labor Organization, an affiliate of the United Nations, in June, 1952, adopted a convention known as the "Minimum Standards of Social Security." This convention includes almost all of the socialist medical proposals that have until now been rejected by the Congress. If this convention is ratified under the existing provision of our Constitution, government control of medicine will have been achieved. Because of the danger of the socialization of medicine via international treaty, the American Medical Association favors a redefinition of existing treaty-making powers.

*Reprinted from The Journal of the American Medical Association, Feb. 20, 1954, Vol. 154, p. 680.

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ARIZONA MEDICINE

Journal of ARIZONA MEDICAL ASSOCIATION

VOL. 11, NO. 5 MAY, 1954

TABLE OF CONTENTS

OFFICERS

ARIZONA MEDICAL ASSOCIATION, INC., DIRECTORY 6A
WOMAN'S AUXILIARY DIRECTORY 6A
COUNTY MEDICAL SOCIETY OFFICERS, 1954 DIRECTORY 31A

ORIGINAL ARTICLES

CERVICITIS AND VAGINITIS (An Outline of Modern Diagnosis and Treatment)..... 163
Edmund W. Overstreet, M.D., San Francisco, California
NEUROFIBROMA OF THE LARYNX IN A FIVE YEAR OLD CHILD..... 167
John S. Mikell, M.D., A. Harry Neffson, M.D., and Miss Cynthia A. Daly, Tucson, Ariz.
THE USE OF CHEMOTHERAPY AS AN ADJUNCT TO HEALING FOLLOWING HEMORRHOIDECTOMY 169
Drs. H. D. Cogswell; E. W. Czerny and J. F. Fritz, Tucson, Arizona

MEDICAL PROBLEMS

PHOENIX CLINICAL CLUB 170
Drs. Wm. B. McGrath and O. O. Williams, Phoenix, Arizona

PRESIDENT'S PAGE

ADIOS AMIGOS 178
Edward M. Hayden, M.D., Tucson, Arizona

EDITORIAL

SOCIAL SECURITY FOR THE MEDICAL PROFESSION 179
LETTER TO THE EDITOR 180
MEETING NOTICES 180
ARIZONA MEDICAL ASSOCIATION EXPRESS THEIR APPRECIATION 180

TOPICS OF CURRENT MEDICAL INTEREST

RX., DX., AND DRS. 182
Guillermo Osler, M.D.
ANNUAL REPORT PROFESSIONAL BOARD 186
Hugh C. Thompson, M.D., Chairman, Tucson, Arizona
ADDENDUM TO ANNUAL REPORT OF THE PROFESSIONAL BOARD 186
RESOLUTION OF THE COUNCIL OF THE N. J. NEUROPSYCHIATRIC ASS'N.... 187
ANNUAL REPORT PUBLIC RELATIONS BOARD 188
Leo J. Kent, M.D., Chairman, Tucson, Arizona
ANNUAL REPORT EDITOR-IN-CHIEF 190
R. Lee Foster, M.D., Editor-in-Chief, Phoenix, Arizona
ANNUAL REPORT OF THE SECRETARY 191
D. W. Melick, M.D., Secretary, Phoenix, Arizona
ANNUAL REPORT INDUSTRIAL RELATIONS COMMITTEE 192
Wm. B. McGrath, M.D., Chairman, Phoenix, Arizona
INTERESTING TOPICS 194
W. Warner Watkins, M.D., Phoenix, Arizona
THE MEANING OF PHARMACY 195
Arizona Pharmaceutical Association
THE PROFESSIONAL BOARD — Postgraduate Seminars and Education 196
Hugh C. Thompson, M.D., Tucson, Arizona
THE ORGANIZATION PAGE 197
Norman A. Ross, M.D., Phoenix, Arizona
IN MEMORIUM — Charles W. Sult, Sr., M.D. — Clarence E. Yount, Sr., M.D..... 199
SESSION ON LEGAL MEDICINE AT SAN FRANCISCO MEETING 202
BOOK REVIEWS..... 203

WOMAN'S AUXILIARY

NURSE RECRUITMENT 200
Mrs. Max Costin, Chairman, Tucson, Arizona
AMERICAN MEDICAL EDUCATION FOUNDATION 202
Mrs. J. B. Tucker, Chairman, Casa Grande, Arizona

DIRECTORY

LABORATORIES 31A
SANATORIUM DIRECTORY 33A
DRUGGISTS DIRECTORY 35A
PHYSICIANS DIRECTORY 37A

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Original ARTICLES

CERVICITIS AND VAGINITIS

An Outline of Modern Diagnosis and Treatment

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FROM time to time it is worthwhile to re-examine, in the light of modern medical advances, the apparently simply daily practices and technics which have become habitual with us over the years. We are often surprised to find that we have clung to old habit-systems which really deserve revision and modernization. This is more often the case in the management of minor diseases than of major ones. Certainly in the field of gynecology cervicitis and vaginitis are, for the most part, minor, annoying conditions rather than major, disabling ones. Nevertheless, continual progress has been made in their diagnosis and therapy, so it may be of value to review the present status thereof. Since the subject is a rather extensive one, this review is presented in outline form rather than in complete discussion.

I. SYMPTOMATOLOGY

A. Prime symptoms.

1. Leucorrhoea: white, yellowish, occasionally blood-tinged or brownish, thin-serous, frothy, purulent, thick, or caseous.

2. Pruritis: vaginal or vulvar alone.

B. Inconstant symptoms.

1. Spotting bleeding — especially post-coital spotting.

2. Dyspareunia:

At introitus — suggests vulvitis and vaginitis.

Deep pelvic — suggests cervicitis with parametritis and uterosacral ligament pain.

3. Pelvic pain:

Low-grade cellulitis secondary to cervicitis. Nature and radiation of pain give good diagnostic leads. Careful history-taking important.

4. Urinary symptoms: dysuria, frequency, urgency.

Low-grade urethritis and trigonitis secondary to cervicitis.

Trichomonas urethritis and cystitis.

Skeneitis.

5. Backache (rare):

Cellulitis of uterosacral ligaments, parametritis.

II. DIAGNOSTIC APPROACH

A. Should be **systematic.**

1. If possible—warn patient **not to take** a **douche** two days prior to examination.

2. History of symptomatology:

Time and care here will often reveal more than the physical examination.

3. Vulvar inspection:

Evidence of local dermatologic lesions. Skene's ducts for exudate.

Urethral meatus. Nature of leucorrhoeal discharge.

4. Vaginal cytologic smear (Papanicolaou-Traut):

Take smear **before** any speculom or pelvic examination.

*Read before the annual meeting, Arizona Medical Association, Tucson, Arizona, April, 1953.

One smear from posterior vaginal fornix; one smear direct from cervical os.

Especially important if any history or irregular bleeding—in cancer of endometrium, cervix, vagina, tube, slight leucorrhoea may be the first early symptom.

Cytologic smears will often pick up obscure cases of Trichomoniasis or Moniliasis not revealed by other office methods.

5. Speculum examination:

(Avoid the use of a speculum lubricant—it obscures the picture, spoils the wet smear—use plain water for lubrication.)

a. Careful inspection of vaginal mucous membranes and cervix.

b. Wet smear from vagina and cervical os:

Swab simple cotton applicator over surfaces and in any discharge present. Shake out in a drop of warm saline or Ringer's solution on a standard slide. Drop on cover slip. (Actual hanging-drop technic not necessary.) Examine **soon** under microscope.

c. If history or inspection suggests gonorrhoea—air-dried smears from cervix and urethra (and especially pus from Skene's or Bartholin's glands) for Gram stain study.

6. Bimanual pelvic examination:

Must rule out more extensive pelvic lesions of greater significance contributing to or producing the symptomatology: P.I.D., gross-malignancy, endometriosis, tumors, etc.

7. Occasional diagnostic procedures:

a. Cervical biopsy—punch biopsy in the office.

b. Cervical culture (rare). Media for Trichomonads (see below).

c. catheterized urine specimen.

d. Cystoscopy (rare).

III. PRINCIPAL SPECIFIC CONDITIONS

A. CERVICITIS.

1. Infectious agents.

a. Gonococcal cervicitis.

1) Diagnosis usually by Gram stained smear—rarely, by culture.

2) Antibiotics a boon for Rx! Local Rx outmoded. Parenteral Rx.

Rx of Choice: **Penicillin** — 1 million units q. 2 d. for 2-3 shots (office therapy). But beware of the increasing incidence of penicillin-sensitive individuals—question every patient before Rx

Alternate Rx: Sulfa compounds. Best are the mixed ones: Combisul, Gantrisin. 2-4 gm. daily x 5-7 days. Watch for sensitivity, renal trouble, blood trouble.

Occasional Rx: Aureomycin, Terramycin, Streptomycin.

b. Syphilis.

1) Primary chancre usually missed in women. If suspicious of punched-out, indurated ulcer—darkfield examination.

2) **Warning:** Widespread use of antibiotics today—but inadequate dosage to cure syphilis—**can obscure the early disease.** If any suspicion whatever—history of contact or findings on examination—follow patient with serologic tests.

c. Tuberculosis.

1) Quite rare.

2) Necrotic, caseous appearance of cervix; or granulomatous, polypoid growth.

3) Be suspicious if a cervicitis does not heal with usual methods of Rx — and of cancer: biopsy the lesion.

a) Always **check the end-results of any therapy for cervicitis or vaginitis**—do not just prescribe and then discharge patient pending further symptoms.

d. Mixed infections with common organisms.

1) The most common cervicitis: erosion. Especially seen with postpartum cervical lacerations.

2) Management:

a) Older: douches, tampons, conization, even trachelorrhaphy.

b) Modern:

Acute and Subacute:

1) Parenteral penicillin, 1 million units q. 2 d. x 3 d.

or

Dicrysticin, 2 cc daily x 4-5d.

2) Vaginal jellies and creams containing Sulfa, Bacitracin, Tyrothricin. **Very effective.**

3) **Hot** douches (vinegar or antiseptic)—not for cleansing or medicational purposes (inefficient) but for local **heat treatment.** Always use **acid** douche, pH circa 4.0.

Chronic Stage:

1) **Light** cauterization of cervix.

a) Chemical—Negatan.

b) Nasal tip cautery — cherry red.

c) Coagulating current cautery—light frosting.

2) Following cauterization.

a) Vaginal sulfa jellies q.n.

b) **No** douches for 4-5 days—until after slough.

c) Prohibit coitus 2 weeks.

d) Check healing in 2 weeks.

1) May repeat cauterization of unhealed areas.

2) Slow healing: Estrogen suppositories— for example, Stilbestrol, 0.1 mg. per **water-soluble** (non-greasy) suppository — q. n. for 7-14 days. To promote epithelial growth.

3) Warnings re treatment of chronic cervicitis:

a) We decry conization. Unnecessary; bleeding complications; cervical stenosis; disturbed cervical physiology.

b) Avoid **local vaginal** use of penicillin—sensitivity.

c) Avoid alkaline (or neutral) douches—can **produce** vaginitis, especially at and after the menopause.

2. Tumors.

a. Cervical polyp.

1) Uusually easily seen. Spread speculum wide to open up cervical os.

2) Always infected—chronic cervictis.

3) Management:

a) Remove by avulsion—twisting.

Except when large with a broad base—excessive bleeding—will require hospital D. & C.

b) Always have pathological examination—occasional carcinoma.

c) After avulsion:

1) Negatan to base — hemostasis. May require small gauze-sponge pack in cervical os (with Negatan)—about 6 hours.

2) Local Rx thereafter as for chronic cervicitis (excluding cauterization—rarely necessary).

b. Carcinoma.

1) Often looks like simple erosion or cervicitis! **Importance** of vaginal cytologic smears (Papanicolaou-Traut) in **routine** examination.

Still today **too many** early carcinomata of the cervix treated **too long** as simple cervicitis before proper diagnosis is made.

Ignore patient's age: Find many early carcinomata in young patients—intra-epithelial type.

2) **Contact bleeding** on wiping cervix. Occurs often in acute and subacute cervicitis; but is always **suspicious** of carcinoma.

3) Beware of pregnant cervix — often looks like carcinoma but is not. Play it safe—vaginal cytology smears—biopsy if very suspicious: **expert** pathologic examination required before treatment for malignancy.

c. Nabothian cysts.

1) End-Product of chronic cervicitis. Benign. Quiescent. Sterile. **Harmless!**

2) **No treatment necessary** (except with extreme distortion of cervix).

B. VAGINITIS

(Often secondary to or accompanied by cervicitis—treat the latter as indicated.)

1. Trichomonas.

a. The most frequent type of vaginitis in premenopausal women.

b. Still poorly understood. Apparently asymptomatic in many women. Mode of acquisition often obscure.

1) Increasing emphasis on sex partner as source. Only very slight if any symptoms in male—continual re-infestation of wife. Examination of urine and prostatic fluid of husband in intractable trichomonas vaginitis of wife.

2) **Not** acquired from the bowel. Now proven that **Trich. hominis** (often carried in the bowel) **cannot** infect the vagina.

3) Importance of personal contact. Daughters of infested mothers. Question of borrowed clothing. Question of spore-form of trichomonads—uncertain.

4) Trichomonas vaginitis especially intractable following:

a) Hysterectomy.

b) Extensive cervical cauterization or conization.

c) The menopause.

5) Importance of female urinary tract infestation; Skene's glands. Continual vaginal re-infestation if **vaginal** Rx alone is used.

c. Diagnosis:

1) Suspect it:

1) Frothy, yellowish leucorrhoea, foul odor.

2) Severe vaginal pruritis in younger women.

3) Petechiae on vaginal and cervical mucous membranes.

2) Prove it:

1) Wet smear.

2) Vaginal cytologic smear.

3) Wet smear in 5% glucose in sa-

line—get activation of motility in about 2 hours.

4) Special culture media (very rarely)

d. Treatment

1) For quick relief of initial very severe irritation:

a) Amertan jelly, Nylmerate jelly.

b) Soothing medicated douches.

2) **Basic principles of cure:**

a) Initial cleansing (office) with detergent solution—commercial detergents are satisfactory.

b) Use of protozoacides:

1) **Constantly** in vagina 24 hours a day.

2) Constant treatment **during** at least one menstrual period.

3) Treatment over long periods of time, tapering off.

Protozoacides:

Phenylmercuric acetate, Acetarsone, Floraquin, Silver picrate, Negatan, etc.

Advantageous: Combination of protozoacide with a detergent, wetting agent, lactose, local antibiotic, acid agent: for example, Vagisol, Baculin.

Acid buffered jellies valuable—local application to vulva and urethra, better spread in vagina: for example, Nylmerate, Aci-jel.

c) Tampons may be of value in keeping vagina dry and non-macerated. Preferably medicated ones like acetarsone tampons.

d) Douches **only for cleansing purposes,** not for Rx . Twice a week is plenty.

e) Elimination of foci harboring trichomonads: Routine medications must be applied to **vulva and urethral meatus** as well as vagina. Male sex partner. Skene's ducts: may need obliteration by coagulation under anaesthesia. Urethra and bladder: instillations of silver nitrate, 30-60 cc. of 1:1000 solution. Cervix: cauterization—chemical or cautery.

f) Intractable cases: In addition to the above:

1) Change the medication—development of resistant strains.

2) Medicate for **long** periods, tapering off:

For example: 1 tablet b.i.d. for 1 month; q.n. for one month; every other night for one month; twice a week for one month; once a week for one month—with especial emphasis on Rx during menses.

2. Moniliasis.

a) More common today—follows parenteral use of Aureomycin, Terramycin.

b) Typical picture of "vaginal thrush"—white, patchy areas, bleeding on rubbing off. Seen in wet smear. Some cases obscure in diagnosis. Vaginal cytologic smear picks it up.

c) Treatment: Almost specific: Local application of 1-2% Gentian violet. Messy. (Gentian violet tampons, jellies are available). Almost as good: Propionic acid jellies. Simple antiseptic douche, but only occasional.

3. Diabetic vulvo-vaginitis.

Be suspicious when vulva are beefy-red. Urinalysis. Monilia often accompany. Rx is obvious.

4) Douche sensitivities.

a) Too much douching by women today — advertising. Some sensitivity to some commercial products. Average normal woman: simple vinegar douche 2-4 x/month is plenty. Daily douching—can cause irritational leucorrhea.

5. Non-specific vaginitis.

a) May be allergic (rare). Foods. Contraceptive jellies & creams. Condoms. Try antihistaminics.

b) Achlorhydria. Related to vaginitis. In intractable, non-specific vaginitis get gastric analysis. HCl, gtts 5-10 tid or Glutamic acid HCl, 0.3 gm bid to tid, often cures if achlorhydria is present.

c) Psychogenic vulvo-vaginitis. Definitely does occur. But be wary of making diagnosis; careful exclusion first.

d) Ovulation leucorrhoea. Mucoid. Excessive in some women. Tampons. Negatan to cervical canal.

6. Atrophic (senile) vaginitis.

a) Cause:

1) Undue local tissue sensitivity to reduced estrogens at and after the menopause.

2) Low vaginal acidity after the menopause. **Warning:** Alkaline douches (dear old soda bicarb!) when used after the menopause can **produce** a severe, florid vaginitis; should never be used at all.

b) Nature

1) Thinned, reddened vaginal MM.

2) Petechial areas, often with cracking and slight bleeding. A common cause of postmenopausal bleeding—but always rule out carcinoma.

3) Principal symptom: Pruritis.

Treatment:

1) Estrogen suppositories: Water-soluble base; 0.1-0.25 mg. Stilbestrol or equivalent. 1 suppository nightly x 15 days is usually ample for cure, but may need to be repeated at intervals.

2) Vinegar douches—a routine of 2-3x/wk. will often prevent recurrence.

NEUROFIBROMA OF THE LARYNX IN A FIVE YEAR OLD CHILD LARYNGECTOMY. REHABILITATION.

John S. Mikell, M.D., A. Harry Neffson, M.D. and Cynthia A. Daly
Tucson, Arizona

THE case to be presented is interesting and instructive from the following standpoints:

1. This seems to be the only case so far reported in the available literature of a non-encapsulated neurofibroma of the superior laryngeal nerve with extensions into the larynx, esophagus and neck.

2. It is the only case on record in which a total laryngectomy was required for the eradication of such a lesion.

3. There has been no apparent recurrence in two and one-half years.

4. Rehabilitation for speech has been started and the results so far have been gratifying.

The patient, a Mexican girl, was referred to one of us (J.S.M.) from below the border in August of 1950 at the age of 5. Her mother stated that the child had had difficulty in breathing since shortly after birth and that this difficulty had gradually become more severe. There was no history of any difficulty in swallowing.

Examination of the larynx by direct laryngoscopy showed a large swelling involving the left aryepiglottic fold and arytenoid. Dr. Neffson was asked to see this patient in consultation and he confirmed these findings. A preoperative tentative diagnosis of neurofibroma of the larynx was made and it was desided that a biopsy should be taken following a preliminary tracheotomy. This was done. Histological examination of the laryngeal tissue both by local pathologists and the Armed Institute of Pathology in Washington confirmed the preoperative diagnosis of neurofibroma and hamartoma of the larynx.

It was decided to attempt removal of the tumor through a left lateral pharyngotomy. Dr. Wilkins Manning performed this operation with our assistance in January of 1951. The superior larygeal nerve was isolated and found to be markedly enlarged, roughly about the thickness of a lead pencil and 2 centimeters in length. The nerve had branches which looked like so many tentacles extending in all directions and invading the entire larynx. At this time it was evident that removal of the entire growth could be accomplished only by means of a total laryngectomy. About three weeks later this was done under general anesthesia. The tumor growth was found to infiltrate the esophagus in addition to the larynx. Scattered areas of thickened esophageal tissue were seen. As much of the involved esophagus was removed as possible, but all of it could not be resected and still permit primary closure of the esophageal opening. Following operation the child had a rather stormy course for about one week; recovery was uneventful thereafter.

During the course of a recent tonsillectomy, the esophagus, trachea and bronchi were inspected by direct view; no abnormality was found.

Discussion: So far as we have been able to ascertain only 20 cases of solitary neurofibroma of the larynx and only 8 cases of generalized neurofibromatosis with incidental involvement of the larynx have been reported in the world's literature. In all of the cases reported the lesions were so localized as to make complete excision possible by snare, or at most by pharyngotomy or laryngofissure. In no case was the lesion so extensive as to require total laryngectomy for complete eradication. In this case the attempt to eradicate the growth via a lateral pharyngotomy was ineffective and we had to resort to total laryngectomy. A very interesting facet of this case is that in spite of the fact that not all of the tumor growth could be removed from the esophagus at the time of operation, there has been no evidence of recurrence after checking by thorough examination of the

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trachea, pharynx and esophagus two and one-half years after surgery. This suggests the intriguing thought that following the removal of the main growth, the remainder of the lesion simply withered away just as occurs when a nerve is cut and the peripheral portion atrophies. We hope that other workers may be able to contribute their experiences and thoughts on this subject.

This child is being rehabilitated for speech. Professor Lambert of the Speech Department of the University of Arizona interested Miss Cynthia A. Daly, Speech Correctionist for the Tucson Public Schools in this child. Following are Miss Daly's experiences in teaching this child esophageal speech.

Most adult laryngectomized patients begin speech retraining three or four weeks after operation. Esophageal (belching) speech is the preferred method of pseudo speech for such patients. It can be distinguished from the speech of a normally speaking person only by a rather husky voice quality and a lack of variety in pitch.

Learning to belch at will may take anywhere from one day to many months of practice. The chief obstacle seems to be overcoming inhibitions concerning belching. The process involves swallowing air, trapping it in the esophagus, and belching it back. Usually, during the first lessons, carbonated beverages are used to induce belching. Once it is acquired, esophageal speech is learned much as normal speech (vowels, simple words, etc.), the chief difference being that air from the lungs is replaced by air from the esophagus via the belch.

Eight year old Herlinda Vasquez began speech retraining three years after her laryngectomy (prior to this, a teacher had been unavailable). She first learned to belch with the aid of carbonated beverages. After weeks of practice she belched 27 times while drinking a non-carbonated beverage. In succeeding weeks she learned to say words as she belched, and at the time of my last visit with her, she was saying one syllable English words clearly (hi, bye, cup, pink, etc.)

The child's progress was slow mainly because she did not understand the English language (she understands Spanish), and she could not be made to see the importance of learning to speak aloud. During three years she learned to get what she wanted by pointing and nodding her head. With the aid of pretty pink doll dishes and the sign language, we were able to accelerate her progress. The doll dishes were used as a reward for belching.

Th prognosis for speech depends directly on the frequency of speech lessons and on the ability of the therapist to stimulate this little Mexican girl with the desire to speak aloud. With continued speech training, she will learn to talk in sentences and her speech will sound almost normal (see exceptions, paragraph one) as that of other little girls her age. She may in time learn to whistle and even to sing.

THE USE OF CHEMOTHERAPY AS AN ADJUNCT TO HEALING FOLLOWING HEMORRHOIDECTOMY

Howard D. Cogswell, M.D., Everett W. Czerny, M.D., and J. Fritz, M.D.
Tucson, Arizona

THE postoperative period following hemorrhoidectomy has been regarded as the most painful of all the most common operations. Complications as well, such as postoperative fissures, stenosis and prolonged healing have made many surgeons dislike the operation and patients lose faith in their surgeons. A number of individuals who need a hemorrhoidectomy procrastinate, suffering pain, bleeding and disability because of the tales told by their acquaintences who have had the operation. Numerous analgesics have been recommended to alleviate the postoperative pain—applications being made locally or by injection. The local application is only transitory and not too effective and the injection of these substances is not without disadvantages and risks. Postoperative pain is often relieved by their use but instances of prolonged incontinence of the rectal sphincters, peri-rectal abscesses and other complications have made many surgeons reluctant to use such drugs.

It was observed that some patients had relatively little postoperative discomfort and examination of the operative site showed that these patients had few signs of infection or inflammation that is commonly seen during the healing period following hemorrhoidectomy. The majority of the patients who had the usual postoperative pain showed edema and redness in the hemorrhoidal area. Their wound edges were often covered with a yellow exudate and purulent drainage would be observed on the dressings placed near the anus. It was noted, too, that those patients with little postoperative pain, healed more rapidly and were back at their occupations sooner than those who experienced the more uncomfortable healing period. The apparent difference between these two groups appeared to be that those free of pain had very little evidence of infection while those in the other group had evidence of infection in the operated area.

It is logical to surmise that all raw areas in the region of the anus should become infected. It is know, however, that some individuals have a more natural resistence to infection and in other instances, fewer virulent organisms are present in the fecal material and this could account for the lack of gross inflammation and the less painful convalescence following removal of the hemorrhoids in certain patients.

About a year and a half ago, on the assumption that infection was a factor in prolonged postoperative healing and postoperative pain following hemorrhoidectomy, all patients who were to have the operation were placed on sulfathaladine, 0.5 grams to one gram, four times daily, starting this medication four days preoperatively. The drug was then continued throughout the convalescent period until the healing was complete. In two instances where sulfathaladine sensitivity was found to be present, aureomycin was given two days preoperatively and continued until the fifth postoperative day. In the few instances where aureomycin has been used, the proctitis and perianal irritation which can accompany the use of this drug have been kept in mind. Thus far, we have had no patients with this drug sensitivity. When aureomycin is used, the administration should be stopped immediately, should any of the signs of drug sensitivity be noted.

There have been seventy hemorrhoidectomies performed during this period and our results have been excellent. It has been found that postoperative pain is much lessened, the period of healing is shortened, and these patients are returning to their normal activity much sooner than before chemotherapy was instituted as an adjunct to healing.

It is difficult to establish any type of yardstick to measure the value obtained in the use of any type of procedure. We have observed, however, that these patients have required less opiates; leave the hospital sooner; return to their occupations in a shorter time and there have been no postoperative complications of the anal area since this type of therapy has been instituted. The wound edges appear clean, there is some sanguinous discharge, but the purulent anal discharge which had been seen so commonly postoperatively has been greatly diminished with very little edema of the anal area. In most

instances the healing is complete within three weeks and we have seen no instance of fissures which occasionally occur in these cases postoperatively.

Our operative technique has not been changed in any way since this routine has been established to account for the noted improvement in the patient's convalescence. We believe that the hemorrhoidectomy wounds are healing more comfortably and rapidly because of the addition of chemotherapy to control postoperative wound infections.

Conclusions: Chemotherapy apparently reduces postoperative anal and perianal wound infections following hemorrhoidectomy; diminishes postoperative pain; decreases the healing period and allows the patient to resume normal activity more rapidly than those cases where chemotherapy is not used.

PHOENIX *Clinical* CLUB

The Case History in this discussion is selected from the Case Records of the Massachusetts General Hospital, and reprinted from the New England Journal of Medicine. The discussant under Differential Diagnosis is a member of the staff of the Massachusetts General Hospital. The other discussants are members of the Phoenix Clinical Club.

MASSACHUSETTS GENERAL HOSPITAL CASE NO. 38252

A two-and-one-half-year-old boy entered the hospital because of severe abdominal cramps and fever.

Two days before admission the patient had two attacks of severe abdominal cramps that made him double up, during one of which he vomited; in the interval he was well. When he was examined by his physician six hours after the onset, he had a normal temperature, a soft abdomen and normal peristalsis. During that night, his temperature rose to 104°F.; he became delirious and vomited once. The next morning his temperature was normal, but during the afternoon he vomited repeatedly and complained of crampy abdominal pain. A sodium-bicarbonate enema yielded a poor return, and shortly thereafter abdominal distention was noted. In the evening his physician found a diffusely tender, markedly distended abdomen, with distinct spasm and absent peristalsis.

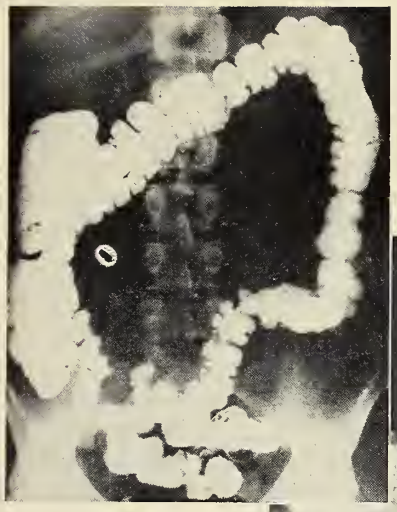
Prior to the onset of this illness he had never complained of abdominal pain and had been well. His bowel movements had always been regular; the last one had been two days prior to the onset of the pain. He had had no serious illnesses.

Examination revealed an acutely ill, markedly dehydrated young boy. The abdomen was markedly distended and tympanitic, without evidence of definite spasm. There was only slight generalized tenderness, and deep palpation did not exaggerate this. No peristaltic sounds were heard. There were no palpable masses or organs. A rectal examination showed an empty rectum and no masses or tenderness. The remainder of the physical examination was negative.

The temperature was 101.6°F., the pulse 164 and the respirations 32. The blood pressure was 112 systolic, 80 diastolic.

The urine had a specific gravity of 1.024 and gave a 3 plus reaction for albumin; the sediment contained a rare hyaline and white-cell cast. Examination of the blood showed a hemoglobin of 10.2 gm. and a white-cell count of 4000, with 44 per cent neutrophils. The nonprotein nitrogen was 50 mg. per 100 cc. and the serum sodium 133.6 milliequiv., the chloride 100 milliequiv., and the carbon dioxide 23.6 milliequiv. per liter. A stool was guaiac positive. An electrocardiogram was normal. A roentgenogram of the chest was negative. An abdominal film showed multiple loops of dilated small bowel in the left upper and lower abdomen. An 8-cm. round structure containing fluid and air was seen in the right midabdomen. The properitoneal fat line on the right was absent.

Following admission the patient was given intravenous fluids, a blood transfusion and antibiotics. At first he had episodes of twitching, became slightly irrational and had a number of chills with temperature rises to 103°F. He was given a small dose of Sodium Amytal and four hours after admission was sleeping. Physical examination at this time showed the ab-



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Ulcerative Colitis



Atonic Colon

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domen still to be distended, with some increase in resistance in the right lower quadrant; the temperature was 103°F. Six hours after admission his state of hydration was improved, but he still appeared acutely ill. The white-cell count was 9000, with 66 per cent neutrophils. There was some resistance and moderate tenderness in the right lower quadrant and diminished peristalsis with an occasional tinkle of normal pitch. Twelve hours after admission the temperature was 100.8°F., and the pulse 140; examination now showed definite severe tenderness in the right lower quadrant, with rebound tenderness. There was much more marked spasm still definitely more marked on the right side; some observers thought that they could outline an ill-defined mass on the right side. No peristalsis was heard. He had not vomited or had a bowel movement since admission. The urinary output was adequate.

Thirteen hours after admission an operation was performed.

Dr. Wm. B. McGrath:

A two-and-a-half-year-old boy was brought to the hospital with cramps and fever. Signs of peritonitis developed, and either mechanical or paralytic obstruction of the small intestine. Tenderness and abdominal resistance seemed finally to localize in the right lower quadrant.

I suppose that the admission diagnosis was appendicitis.

Typhoid was remotely suggested by the leukopenia (4000 WBC) and relative neutropenia of the white blood count. But in any such infection as typhoid or tuberculosis or dysentery or regional ileitis or mesenteric adenitis, a surgical abdomen does not develop within two days.

The protocol mentions unenthusiastically a questionable mass in the right abdomen and a guiac-positive stool. Ileocecal intussusception is a diagnostic possibility. The statistical probability fell rapidly, however, when the boy passed his second birthday. Also, palpation of the belly relaxed by Amytal should better outline a sausage-shaped intussusception if present. Frank blood is expected in the stool and much more severe vomiting would probably accompany intraluminal obstruction of the direct alimentary canal.

X-rays disclosed dilatation of the small bowel and absence of the right properitoneal fat line. These, I presume, were evidences of peritonitis. Difficult to explain is the 8 cm round structure containing fluid and air and located in the right mid-abdomen.

It is hard to conceive that a large abscess had formed so quickly as a complication of ruptured appendix. Note also that the white blood count rose only to 9000.

In this case I believe that intestinal obstruction or even intussusception may have resulted from a Meckel's diverticulum—and as part of the same process an omphalo-mesenteric cyst was present in the X-rays and at operation.

Dr. O. O. Williams:

This two-and-one-half-year-old boy had symptoms of an intermittent mechanical or paralytic intestinal obstruction associated with some fever but in spite of fairly marked dehydration had both a fairly severe anemia and a leukopenia, the leukopenia apparently remaining throughout his entire illness. There were also some other general manifestations such as irritation to the kidneys with some nitrogen retention, hylane and white cell casts and a three plus albumin. Later there was evidence of a perforation of a viscus with a well defined round mass, as seen by x-ray in the abdomen, containing both fluid and air with presumably a fluid level. A generalized peritonitis apparently occurred with localization and forming a mass on the right side, and at least evidence of considerable inflammatory reaction if not abscess formation in the right lower quadrant. He had not had a bowel movement since his admission but presumably there was a stool previous to admission as it was stated that a stool was Guiac positive.

One, therefore, has to look for a general or local condition which will cause an intestinal obstruction with perforation and presumably hemorrhage, and perhaps even sepsis in a child of this age. We can begin by discussing the general conditions which might cause this and rule them in or out rather rapidly. First one might consider an embolus from a bacterial endocarditis causing bowel necrosis and perforation with encapsulated air and blood or fluid somewhere in the small intestinal tract. This is very unlikely as the temperature was not that of a septicemia nor was there any indication that the heart was involved in any way. Likewise a fairly acute nephritis or a pyelonephritis must be considered. The patient did have hylane and white blood cell casts with

some evidence of mild nitrogen retention which could easily have caused an acute ileus. However, acute ileus from this condition would in all likelihood have been continuous and progressive and there would have been considerable more evidence of renal failure than was seen in this case. Consequently a nephritic condition causing acute ileus is not very likely. Likewise perforation from acute ileus or dilatation from toxemia is unlikely except possibly in a very late stage and also the symptoms would be more than that of an intermittent obstruction.

One condition has to be seriously considered in view of the fact that there is a well defined anemia and a leukopenia which lasted apparently throughout his illness in spite of the high temperature apparent infection of the abdominal cavity and lack of other symptoms or other signs presented. This is typhoid fever. With one reared in country showing a fair number of cases of typhoid fever it is not too rare to see a case of a so-called walking typhoid fever. In these cases the prodromal symptoms and the first stages of the disease have been somewhat minimal even to the absence of a so-called pea soup type of stool associated with diarrhea. Some of these cases are very fulminating or if not fulminating perforate relatively early in the disease rather than in the later stages such as third or fourth week. They show this type of reaction in that they do have kidney changes as well as a persistent leukopenia and anemia. However, there is no evidence of rose spots which might be present in acute fulminating cases nor is there evidence of severe typhoid bacteremia. No enlarged spleen is described and there had been no indication of other lymph node enlargement. In addition the pulse is rather rapid and this is usually slow even in the presence of a peritonitis in typhoid fever. Consequently I see no definite indication for entertaining this diagnosis.

Of the many local conditions within the abdomen itself, these are almost too numerous to mention although there are a few which are relatively common and might be present in this case. The first to be considered will be that of an intussusception. This can be caused by the so-called sliding type of intussusception including the ileum and even part of cecum into the large intestines or from a mechanical obstruction such as a neoplastic growth as in a small lymphoma or polyp of the terminal portion of the ileum. A lymphomatous condition is certainly to be considered, again because of the leukopenia and anemia present with a relative neutropenia in both blood counts. However, again we have no indication of the enlarged spleen or enlargement of lymph node though an abdominal type of either Hodgkins' or lymphoma or some other type could be present. The patient is somewhat old for intussusception unless previous symptoms had been present. If this patient had had episodies of previous partial obstruction of some type one would seriously entertain the possibility of intussusception. Again here in the original examination following the episode of vomiting the patient had a soft abdomen and normal peristalsis.

The physician did not feel any mass such as intussusception would have given unless it had become spontaneously reduced of its own accord. In spite of the age, lack of previous symptoms and the absence of a mass one can not eliminate this condition from consideration. There was no gross blood and mucus in the stool such as usually found in recurrent intussusception.

Acute apendicitis of course is seriously to be considered. Acute appendicitis is not likely to be the original condition but could be associated with and following a previous intussusception with an obstruction to the blood supply causing necrosis either of the ileum or of the appendix and a perforation. However, the onset and again the lack of leukocytosis is against acute appendicitis. The generalized symptoms are those frequently seen in children in acute appendicitis before localization and this is apparently in the favor of acute appendicitis. Uncomplicated acute appendicitis should not, however, cause free air in the abdominal cavity.

There are many congenital anomalous conditions occurring in the abdomen which might be the cause of either a volvulus or other type of intestinal obstruction. We can go over some of these rather rapidly. One, malrotation of the bowel does frequently cause intestinal obstruction because of congenital band which might occur. As a rule, however, these congenital bands are rather high perhaps almost to the duodenum and the obstruction is that of a high small intestinal obstruction. However, the chances are strong that in malrotation if the acute obstruction had been established it

would have been continuous and progressive. In most instances chronic or periodic intestinal obstruction usually results from the presence of malrotation. Duplication of the alimentary tract is sometimes present and in these cases both air and fluid could be found in the so-called enteric inclusion or enterogenous cyst. Tubular duplications of the ileum may be present and in these instances there may be volvulus formed because of the bands which might be present. However, there is no indication of this being present as in most instances gastrointestinal symptoms precede the obstruction. The most common anomulous condition which might cause a perforation, hemorrhage, peritonitis and obstruction is that of a Meckel's diverticulum. As is well known this is the remains of the omphalomesenteric duct. There are several forms of this type of anomalous condition one in which there is a circular portion of the duct which may be half way between the umbilicus and the ileum nad may open into one or the other or both. They may also be completely included in the small intestinal wall and thus become enlarged. Many of these contain gastric or pancreatic tissue and are a fertile field for perforation and hemorrhage. In this case there would be abundant air and fluid in the sacular mass. They also, because of the band which reaches from the umbilicus to the intestine, would be subject to a volvulous-like lesion in the small intestinal tract causing obstruction. This can be intermittent or may become permanent. In addition to this even in the absence of a true obstruction the patient may develop an ileus from a perforation, hemorrhage and peritonitis. In addition to this the diverticulum may become inverted and may actually be the starting point for an intussusception. The entire symptoms of this patient could be explained on the presence of remanent of the omphalomesenteric duct with the large sacular mass being perforated causing hemorrhage into this site with the presence of fluid. There also could be a generalized peritonitis or an ileus from this. However, this should be accompanied by a leukocytosis even though infection is absent as the anemia in the hemorrhage would cause irritation to the large intestine. Other bands in and around the appendix such as Jackson's Veil could cause obstruction at this point perhaps including the ileum, causing intussusception but there would be unlikely to be a perforation so early in the course of the illness. The perforation would come from gangrene of a reduced intussusception. Patent urachus is another congenital anomaly which might cause a similar obstruction. Diverticuli of other types, either congenital or acquired, might give the same symptoms.

Segmental ileocolitis (regional ileitis) is also to be considered. There has been a case report of two of so-called segmental regional ileitis occurring in infants of this age. This would cause symptoms of chronic intermittent obstruction but it would be unlikely to result in a perforation so early in the disease. While I am very much intrigued with the possibility of this being a perforation from a typhoid ulceration chiefly because of the persistent leukopenia I believe the most likely diagnosis would be a Meckel's diverticulum causing mechanical obstruction or an acute ileus resulting from perforation with hemorrhage and a remanent of abdominal mesenteric duct. Therefore, my diagnosis is perforation and hemorrhage of a Meckel's diverticulum with intestinal obstruction.

DIFFERENTIAL DIAGNOSIS

Dr. George L. Nardi: It seems to me that this boils down to a differential diagnosis in a two-and-a-half-year-old boy who had severe abdominal pain, masses both palpable and visible by x-ray examination and blood in the stool. There are three surgical diagnosis and one non-surgical that I think have to be considered. The three surgical diagnoses are appendicitis, intussusception and Meckel's diverticulum; the nonsurgical diagnosis, Henoch's purpura.

At the turn of the century, Osler wrote a very interesting paper on Henoch's purpura, in which he pointed out that it has often been mistaken for an acute abdominal condition because of the typical findings of an acute abdomen, with blood in the stool. However in this case, in view of the x-ray findings, the palpable mass and the absence of a rash, I would be inclined to rule out Henoch's purpra.

Dr. Wyman, will you show the x-ray films? Does this 8-cm. structure with fluid and air mean a fluid level?

Dr. Stanley M. Wyman: There is a definite fluid level, Dr. Nardi. This film was taken with the child lying on his right side, and this rounded gas-filled, dome-like shadow with a definite fluid level in its midportion is seen. This is the same shadow, seen occupying the right lower abdomen when the patient is lying on his back.

Dr. Nardi: It is not the kind of fluid level you sometimes see in dilatation and distention of the small bowel?

Dr. Wyman: I do not believe so. One can see very definite air-filled, distended loops of small bowel in the upper left and central abdomen extended down nearly to the ileum. The right colon can be very poorly seen. There seems to be some gas in the descending colon, but that also is not distended and is poorly visualized. This structure, whatever it is, is quite round and rather smooth, has a definite content of air and fluid and may be causing some embarrassment of the small bowel.

Dr. Nardi: The properitoneal fat line of the abdomen is absent. What does that mean?

Dr. Wyman: I think the absence of the properitoneal fat line indicates an inflammatory process that has gone on for some time and has resulted in infiltration of the fatty layer by edema, loss of the normal radiolucency of the fat and replacement of its density by the density of inflammatory exudate.

Dr. Nardi: The clinical history was consistent with intestinal obstruction. However, because there was a question of gas in the large bowel, and because the patient was intermittently better, I do not think that he had a real mechanical intestinal obstruction. In addition, I wonder about the white count of 4000 with 44 per cent neutrophils, which after he was hydrated and had received a blood transfusion, went to 9000, with 66 per cent neutrophils; that suggests that at some time while he was in the hospital something acute happened. I think the acute process was inflammatory, either a perforation or tissue necrosis and gangrene. One phrase in the protocol bothers me—"and occasional tinkle of normal pitch". I should like to know whether the patient had a tinkle of peristalsis of normal pitch. I do not think a tinkle is of normal pitch.

Dr. Richard Warren: He had definite but subdued peristalsis, observed once or twice. I am tone deaf; I would not be able to tell you about the pitch.

Dr. Nardi: I am still left with the three conditions that might be responsible for an intestinal obstruction. The positive guaiac stool and this odd mass in the right lower quadrant do not fit in with a diagnosis of appendicitis. It seems to me that the diagnosis lies between intussusception and Meckel's diverticulum. The history, I think, is more compatible with intussusception: crampy abdominal pain in a child of this age, even though he may be somewhat old, a free period without any symptoms and then a recurrency. One does not rule the other out; however, inverted Meckel's diverticulum may often be the leading point for an intussusception so the child may have had both conditions; either or both could have given him a positive stool guaiac test. If it were intussusception alone, I do not know how to account for the fluid level. Have you ever seen such a level with intussusception, Dr. Wyman?

Dr. Wyman: I have not seen one; I think that is a very good point.

Dr. Nardi: Could he have had Meckel's divertum alone? The size of the mass described in the protocol I thought was too big for Meckel's diverticulum, but on looking up Meckel's diverticulum I found they had been reported as long as 38 inches. I think I shall say he had Meckel's diverticulum with a sudden acute episode that caused the Service to operate on him. What that acute episode was, I do not know. I do not think it was an intussusception. I think it could have been gangrene or perforation. The bleeding with Meckel's diverticulum is apparently due to ulcerations that are not in the diverticulum but in the ileum itself at the mouth of the diverticulum. In the Children's Hospital series, 25 out of 26 patients had ectopic gastric mucosa in the diverticulum. I think this was Meckel's divertuculum, possibly with ectopic gastric mucosa.

Dr. Warren: We believed that this patient presented a differential diagnosis between appendicitis and Meckel's diverticulum. Although we considered intussusception very carefully at first, we did not consider it in the final differential diagnosis largely because he had gas in the large bowel and therefore did not have a small-bowel obstruction on that basis. We did not have, perhaps due to our own fault, the considered opinion of the Radiology Department with regard to the distended gas-filled globule in the right lower quadrant, and we had not regarded that seriously as anything other than dilated cecum with a fluid level. I am sure that if we had sought the Radiology Department's opinion we would have made the correct diagnosis. There was never any question that the patient had an acute abdomen. We waited six or eight hours because it seemed best in order to get him into shape for the

operation. When we induced anesthesia, I was prepared to make a diagnosis of Meckel's diverticulum with abscess formation largely because of the blood in the stool; after he was under anesthesia, we felt the mass much more definitely well out in the flank in a place where I do not think Meckel's diverticulum could be, so I opened the abdomen with a diagnosis of appendicial abscess, with adherent omentum.

Dr. Wyman: I would like to correct one impression; Dr. Warren gives us too much credit. When this case was presented in our own meeting last week, we did not make the diagnosis.

CLINICAL DIAGNOSIS

Appendicial abscess with adherent omentum.

DR. NARDI'S DIAGNOSIS

Meckel's diverticulum with gastric mucosa.

ANATOMICIAL DIAGNOSIS

Torsion and Gangrene of Meckel's Diverticulum.

PATHOLOGICAL DISCUSSION

Dr. Benjamin Castleman: Would you tell us the operative findings, Dr. Warren?

Dr. Warren: He had an infected mass about the same size as that shown in the x-ray film, which we thought, on opening the abdomen, was a loop of gangrenous bowel; it was, however, gangrenous Meckel's diverticulum that had twisted about 180 degrees on itself. It was in the usual place on the antimesenteric border of the ileum about three feet from the ileocecal valve. The blood supply going to it obviously had been shut off by the torsion. There was a considerable amount of local peritonitis. Although there was no gross rupture of the diverticulum, it looked as if it would rupture at any moment. We were afraid that we could not get it out without rupture. The small bowel was obstructed in this region but not completely. We did not resect the small bowel but merely took a wedge out. We examined the lumen of the ileum through the opening and found no gastric mucosa in the bowel that was left behind.

Dr. Castleman: You would not need to have any here; the torsion produced the gangrene, and microscopical sections bore this out. I cannot add much more to the gross description.

Dr. Warren: I wish we had had Dr. Nardi around that Sunday morning!

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THE *President's* PAGE

ADIOS AMIGOS

BEFORE BOWING OUT TO MY SUCCESSOR ON THIS PAGE, I WANT AGAIN TO THANK THE MEMBERSHIP OF ARIZONA MEDICAL ASSOCIATION FOR THE HONOR AND PRIVILEGE OF BEING YOUR PRESIDENT DURING THE YEAR PAST, AND TO THANK THE VARIOUS COMMITTEE CHAIRMEN AND COMMITTEE MEMBERSHIPS FOR THEIR SPLENDID COOPERATION. THE AMOUNT OF WORK INITIATED OR ACCOMPLISHED HAS BEEN CONSIDERABLE AND PRODUCTIVE. PROOF OF THIS IS SHOWN IN THE ABSTRACTED REPORTS SUBMITTED TO THE DELEGATES BY THE OFFICERS AND COMMITTEE CHAIRMEN.

THESE REPORTS DO NOT MORE THAN FAINTLY REFLECT THE HOURS OF DELIBERATION AND WORK. THE ONLY NOTE OF SEEMING FRUSTRATION COMES FROM THE GRIEVANCE COMMITTEE, WHICH MET ONLY TWICE DURING THE YEAR, AND SEEMED UNHAPPY THAT THEY COULD NOT HAVE WORKED HARDER. THAT IS AN ENCOURAGING SIGN,—AND AN INDICATION PERHAPS THAT OUR COMPONENT SOCIETIES AND OUR MEMBERSHIP ARE TAKING STEPS TO PREVENT MISUNDERSTANDINGS FROM BECOMING GRIEVANCES. SINCE THE PAST-PRESIDENT AUTOMATICALLY BECOMES CHAIRMAN OF THE GRIEVANCE COMMITTEE, IT IS HOPED SINCERELY THAT IN THE COMING YEAR THE COMMITTEE NEED MEET BUT ONCE, AND HAVE NO BUSINESS TO CONDUCT!

YOUR PRESIDENT CAN TAKE NO CREDIT FOR WHAT HAS BEEN DONE. HE APPOINTS NEW MEMBERS TO STANDING COMMITTEES, APPOINTS SPECIAL COMMITTEES WHERE NEEDED, AND THE COMMITTEES DO THE WORK. A FEW MEETINGS, CORRESPONDENCE AND TRYING TO KEEP ABREAST OF HAPPENINGS CONSUME SOME TIME. THE CHIEF CONCERN IS WHAT TO WRITE ON THIS MONTHLY PAGE THAT ISN'T TOO EARLY FOR RELEASE OR THAT HASN'T ALREADY BEEN COVERED BY SOMEONE ELSE. OUR PUBLISHER HAS HAD A TRYING TASK GETTING COPY FOR THIS PAGE, FOR WHICH I APOLOGIZE.

AGAIN, MY THANKS TO YOU. GOOD LUCK DR. THOENY, AND ADIOS AMIGOS.

EDWARD M. HAYDEN, M.D.
PRESIDENT

Editorial

ARIZONA MEDICINE
Journal of
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VOL. 11 MAY, 1954 NO. 5

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The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.
2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. (See MEDICAL WRITING by Morris Fishbein.)
3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.
4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.
5. Submit manuscript typewritten and double-spaced.
6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.

The Editor is always ready, willing, and happy to help in any way possible.

SOCIAL SECURITY FOR THE MEDICAL PROFESSION

THE administration's social security bill now being considered by Congress contemplates among other things extending present coverage to include an additional 10 million people including farm operators, additional farm and domestic workers, state and local government employees and professional self-employed people, including the medical profession.

Furthermore it contemplates raising the wage base from $3600.00 to $4200 00 and makes no change in the previous provision to gradually increase deductions to a maximum of approximately 8½%.

As the situation has existed in the past there has been some discontent among the profession over its rather pointed exclusion from the benefits of the act. Peculiar situations have arisen in the case of physicians such as instances in which individuals employed part time by industrial organizations have been forced to make contributions under social security and at the time of retirement have been denied benefits under the act.

For those who view the present proposals with approval, it should be pointed out that the increasing wage base and per cent withholding (all, rather than half of the latter would be paid by the self-employed professional man) inject other features into the situation. The maximum contribution now contemplated amounts to some $357.00 annually which will be another substantial chunk removed from the freely disposable portion of the usually tightly budgeted income of the physician.

There is furthermore no assurance as to the type of benefits which will ultimately be received since they vary from year to year at the whim of the political party in power. Since retirement to an almost complete degree is required to entitle one to the benefits, it is doubtful if many physicians will qualify. The provisions are most likely to benefit the physician's widow and children if the widow does not have to work to augment her income.

An insidious feature of this situation is pointed up by a statement attributed to Secretary Hobby in testifying before the House Ways and Means Committee to the effect that it was the intent of Congress that her department have the disposition of this portion of the individual's income and since average incomes have increased appreciably in the past few years, the increase of maximum wage base is required so that her department can get what properly belongs to it for purposes of disposition. Since this is not the first, it is likely that other increases in the maximum wage base will be proposed.

Even though the political party in power has changed, the welfare state marches on. The

American Medical Association in testifying regarding this bill has requested that it be made optional as far as the medical profession is concerned. Since such a procedure, while a good solution for the individual physician would be administratively and actuarially confusing and since the philosophy of the welfare state does not include self determination, it is doubtful that it will be incorporated in the final draft of this proposed measure. It is interesting that the American Dental Association has opposed any coverage for dentists and the American Federation of Labor has urged raising the maximum wage base to $6000.00 at this time.

MEETING NOTICE

Eleventh Annual Meeting of the American Geriatrics Society which will be held June 17-19 in San Francisco, California. This meeting which will precede the meeting of the American Medical Association will have headquarters at the Fairmont Hotel.

LETTER TO THE EDITOR

The Medical Profession of the State of Arizona
Phoenix, Arizona

Dear Friends:

May we, on behalf of the Board of Directors and the Associate Women's Board of Managers, express to you, our grateful thanks for your generous and sympathetic contribution for the building of our new Home.

I would also like to thank the many physicians in all branches of the medical profession who have contributed of their skill and their money since 1896.

The general contractor of the new Florence Crittenton Home, 1022 E. Garfield, advises us that he has every intention of having our new structure completed to the extent that we may begin moving in the last of June, 1954.

Your share in building the new Florence Crittenton Home – a home for unwed mothers, serving Arizona – is sincerely and gratefully appreciated.

Respectfully,
Florence Crittenton Home, Inc.
(Miss) Ethel Hinton
Executive Director

EH:llz

THE AMERICAN CONGRESS OF PHYSICAL MEDICINE AND REHABILITATION

The 32nd annual scientific and clinical session of the American Congress of Physical Medicine and Rehabilitation will be held September 6-11, 1954 inclusive, at the Hotel Statler, Washington, D. C.

Scientific and clinical sessions will be given September 7, 8, 9, 10, and 11. All sessions will be open to members of the medical profession in good standing with the American Medical Association.

In addition to the scientific sessions, annual instruction seminars will be held. These lectures will be open to physicians as well as to therapists, who are registered with the American Registry of Physical Therepists or the American Occupational Therapy Association.

Full information may be obtained by writing to the executive offices, American Congress of Physical Medicine and Rehabilitation, 30 North Michigan Avenue, Chicago 2, Illinois.

THE ARIZONA MEDICAL ASSOCIATION, INC., WISHES TO EXPRESS THEIR APPRECIATION TO THE FOLLOWING FIRMS FOR FURNISHING THE PRIZES FOR THE GOLF TOURNAMENT OF THE 63rd ANNUAL MEETING HELD AT THE SAN MARCOS HOTEL, CHANDLER, ARIZONA, APRIL 25-28, 1954.

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TOPICS OF *Current Medical* INTEREST

RX., DX., AND DRS.

By Guillermo Osler, M. D.

HOW do you discard your DRUG SAMPLES? Here is a story of what can happen, and actually did—A school girl noticed one of her male classmates in Third Grade passing out pills to his pals. She didn't get any, so she told the teacher. The teacher rushed to the principal, who rushed to the children, who pointed out the source (and him without a license!) . . . This juvenile dispenser had passed a trash-box in the alley behind a doctor's house. There, by chance, on top, were the package of pills which the doctor had tossed into his waste-basket the day before . . . Moral—Be careful how and what you discard. Use a large envelope or the plumbing . . . SIDE ISSUE—The pills in this small story were anti-emetic, for the nausea of pregnancy, and the little dears probably couldn't have been made to vomit them up if they tried.

Speaking of poisoning, Shannon reported on "ASPIRIN POISONING in Children" in Minnesota Medicine. He warns that the drug is available, has no antidote, and the effects are hard to combat . . . Violent vomiting, stupor, irritability, dilated pupils, ecchymoses, hyperpnea, sweating, red skin and mucous membranes may be present for many hours . . . Salicylate poisoning basically effects the respiratory center, producing an alkalosis. This continues until the poison is removed, chiefly by the kidneys . . . In the severest cases the alkalosis is replaced by an acidosis, making treatment difficult and dependent on repeated tests . . . He used oxygen, parathyroid extract, high fluid intake, and vitamins C, K, and B . . . This makes DOC BRADY, the columnist, almost seem right in his phobia for even a single aspirin tablet (which shows that being right can happen to anybody).

It has been interesting to watch the slow movement around the cycle of SHOCK CORRECTION. We have cautiously come back to the use of blood-pressure-raising drugs which were banned in 1935 . . . About that time the new M.D. anaesthetists warned against the use of adrenergic drugs. They gave a false security, and did not correct the flaw. Blood must be used to 'treat' shock . . . Then blood (then plasma, then 'dextran') was used to PREVENT shock . . . Then ephedrin was considered legitimate in certain cases, tho it whipped the heart too much . . . Now there are sustained-acting vaso-constrictors which may be used to help in shock, especially when blood loss is not a major factor. A candidate of the Sat. Eve. Post Department of Medicine (described in an article called 'Rescue in the Operating Room') is levo-arterenol.

Dale and Amil of Michigan believe that OSTEOARTHRITIS should not be considered a static, hopeless, wear-and-tear disease. They have very good results in a small series treated with ACTH. The periods of activity are proper places for use of the drug. PROPER use, of course . . . Incidentally we have seen a case of the rather rare but unpleasant panic and depression which can result from ACTH. It is a considerable contrast to the euphoria and well-being which usually occurs. Some of its cause could be the potassium depletion.

We have just seen a list of 48 persons licensed to practice medicine in Ohio last December. It was so heavily loaded with FOREIGN MEDICAL DEGREES as to seem unbelievable, but worth reporting. They included three from Peter Pazmany U., Poland; two from the U. of Budapest; two from the U. of Gracow, Poland; two from Toronto; and one each from the U. of Pecs, Hungary; U. of Riga, Latvia; U. of Lemberg, Poland; U. of Cluj, Rumania; U. of Vienna; U. of Graz, Austria; U. of Debrecen, Hungary; U. of Belgrade, Yugoslavia; U. of Wilno, Poland; U. of Tubingen and U. of Heidelberg, Germany; U. of Szeged, Hungary; U. of Kaunas, Lithuania; Frederick Wilhelm U. of Germany; and the U. of Moscow, You-know-where.

McVay and colleagues of the University of Tennessee stress the protective value of broad-spectrum antibiotics in CHRONIC HEART FAILURE of old people (Am. Jour. Med. Sciences) . . . They also mention an adjunct drug which is necessary, could be very valuable if it works. 'Paraben' will "largely control the overgrowth of candida albicans". . . . Paraben is a compound of the methyl and prophyl esters of parahydroxbenzoic acid . . . Let's remember, but be cautious.

PSYCHIC REASONS have always been mentioned as a cause for INFERTILITY. If a doctor suspects such a cause, the investigation usually stops right there . . . Ford and colleagues of Philadelphia have gone further. They urge a psychologic evaluation, and describe the simple 'lead' questions for detecting emotional conflicts . . . 1. Why do you want a baby? (Motivations and antagonisms often appear in the reply). 2. Would you raise your child as your mother did? 3. What sort of a man is your husband, and how could

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he improve? 4. Would you rather work or keep house? 5. Do you want a girl or a boy? (Women want girls, fear they won't get one). 6. Do you enjoy intercourse? 7. How many children do you want? (The 'neurotic' wants ONE) . . . If a psychic cause is present, psychonalysis and therapy, or even a simple explanation in some cases, may be of help.

There are many ways to get the name of TRADE PREPARATIONS into the public prints, and such efforts form a skilled type of publicity. One method is to have the trade name used as tho it were THE substance itself. (Doctors often do it unconsciously, saying 'Lipiodol' instead of iodized oil). . . . Columnists are fair game, and we can imagine the credit someone got when he placed an article in a nationally syndicated column from Washington. The author told about bungling in Washington which caused deaths in South Korea. "Dihydrostreptomycin and ambistryn" were withheld by severe restrictions, it was said . . . 'Ambistryn' is one of the trade names for a combination of dihydro and streptomycin, but it got in (instead of 'Distrycin' or 'Combistrep') by some way which we hope was imaginative and clever.

It will be interesting to know 'if we can ever find out) whether the horrible creatures which are portrayed in the 'Erythrocin' ADVERTISEMENTS repel or fascinate medical readers . . . They are supposed to represent 'germs', and the idea may be to call attention to the drug at all costs . . . We lean towards the belief that they are too repulsive, but we do remember the name and the connection with the Abbott Laboratories . . . They probably base their advertising on statistical evidence, but we seem to recall that most Americans didn't like the distorted and unpleasant cartoons which the British invented a few years ago.

Don't be taken in by the claims for Terramycin as an adjunct drug in TB. It is a fourth-rate drug, comparatively; huge doses are required; and a high per cent of patient have enteric symptoms . . . Viocin and Aldinamide (pyrazinamide) are second rank drugs, good to have in reserve. The latter may be of value when used with isoniazid, tho it may cause liver damage (according to one report).

A small series of ACUTE BRUCELLOSIS cases responded in very short times when cortisone was added to Terramycin and dihydrostreptomycin. Only 48 cases, but who sees many? . . . Symptoms were minimized, fever vanished in 25% of the usual time, and shocking relapses were rare.

This item is just for us physiologists. Anyone who graduated yesterday (before 1940) is eligible for a brief brushup on how MERCURIAL DIURETICS do their work . . . Organic mercurials were first proven to act on the kidneys, and then on the nephron. They do not act by osmosis, nor on tubular excretion . . . The action is by altering tubular reabsorption. A sulfhydril enzyme, succinic dehydrogenase, is inhibited in the distal tubule. (BAL can prevent it). Diuresis results . . . Next lesson should include the relationship of this mechanism to the ADH substance from the pituitary.

New diagnostic methods, such as ANGIOCARDIOGRAPHY, are showing unsuspected defects more frequently than at any time since necropsies became possible. As an example, a group in New York have been able to report on 11 cases of left superior vena cava . . . The x-ray result looks like a pair of steer-horns, with the dye coming down from each cervical area to the heart. Except, however, the cases in which only a left vena cava exists . . . This flaw has no functional effect, but it may accompany other cardiac congenital abnormalities.

The journal MINNESOTA MEDICINE is usually full of meaty articles, what with the University of Minnesota and the Mayo Clinic at hand . . . It has outdone its usual in the February 1954 issue with a symposium on CARDIOVASCULAR PHYSIOLOGY . . . The text looks like the combination of a mathematics, a physiology, and an electronic journal . . . The data on cardiac catherization and arterial pressure can be followed, but papers on 'indicator dilution techniques' etc., are pretty sophisticated stuff to feed the troops.

'Minnesota-Medicine', however, is either naive or tends to play-down one situation. They recently had a NEWS-NOTE which read as follows,— 'Dr. Walter C. Alvarez, Chicago, spoke at the Minnetonka Parent-Teacher Association of Excelsior on the topic of "What Makes Mothers Nervous". Dr. Alvarez is an editor and formerly at Mayo Clinic. He is said to be an authority on psychosomatic medicine' . . . That is the understatement of the year . . . All we can say to Minn. Med. is, don't apologize, maybe they couldn't get anyone else!

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THE ARIZONA MEDICAL ASSOCIATION, INC. ANNUAL REPORT OF PROFESSIONAL BOARD

THE Professional Board consisting of Doctors Ernest A. Born, Edward H. Bregman, Orin J. Farness, Lewis H. Howard, Elvie B. Jolley, Joseph M. Kinkade, Charles E. Van Epps, George A. Williamson, and Hugh C. Thompson, held its first meeting in Phoenix on June 28, and its second meeting in Tucson, October 31. A third meeting will be scheduled during early April. Subsequent to the first meeting Dr. Charles E. Van Epps found it necessary to resign, and Dr. Milton Semoff consented to replace him.

At the first meeting the Board heard a report from Dr. Salsbury regarding the State Health Department, and decided to urge the Association as strongly as possible to back the Health Department in securing financial assistance and a proper health code from the legislature. This goal as of now has been partially realized.

Articles for publication in Arizona Medicine have been submitted by various members of the Board, to inform the profession of the facilities available, and the needs in each medical specialty represented on the Board. These articles, to some extent, constitute a report of the various subcommittees.

The Subcommittee on Mental Diseases is now officially the Medical Advisory Board to the Board of Control at the Arizona State Hospital, and as such gives the profession a chance to officially advise the management of that institution. During the future years much good can come from this.

The Subcommittee on maternal and child health is to have an exhibit at the State Medical Meeting to demonstrate methods of intravenous therapy in infancy. In addition this Subcommittee is considering methods for reducing premature mortality in rural areas of the state, and investigation of maternal mortality. In both these fields Arizona has shown up very poorly in the national averages.

The Subcommittee on postgraduate education arranged seminars for the smaller cities of the state. These were held in Holbrook, Flagstaff, and Prescott in November, and in Yuma, Florence, Douglas and Safford in February, and the first of March. The University of Utah sent their Professor of Psychiatry and Obstetrics for the Northern circuit, and members of the Departments for the Southern circuit. Arizona Pediatricians and Orthopedists completed the teams of lecturers. The seminars were well received in the Northern part of the state. Reports from the Southern part are not yet available.

The Subcommittee on Hard of Hearing is continuing to cooperate with all the agencies interested in conservation of hearing within the state. Arizona's record in this field seems to be above the average.

The Subcommittee on Cancer helped in the preparation and presentation of a seminar on cancer held in January. The seminar was well attended and a major success.

The Subcommittee on Tuberculosis has been considering various methods of meeting the tuberculosis situation in the state. At their recommendation the Board went on record as approving the program of the State Board of Health in regard to new beds for tuberculosis in the state.

The Chairman of the Board has received excellent cooperation from all the members of the Board and their subcommittees during the last year, and feels that it has been an honor and privilege to serve the State Association.

Respectfully submitted,

Hugh C. Thompson, M.D., Chairman

March 9, 1954

ADDENDUM TO ANNUAL REPORT OF THE PROFESSIONAL BOARD

Subcommittee On Mental Diseases

THE ARIZONA STATE HOSPITAL

The Sub-Committee on Mental Diseases was appointed by the Council of the Arizona Medical Association to serve as a medical advisory board to the Board of Control of the Arizona State Hospital. The Sub-Committee met with this board at some of their meetings since its appointment, in November, 1953, and exchanged views with them relative to plans for improvement of treatment and care at the institution. New facilities under construction were inspected by the group.

It is anticipated that this new contact, not only with the medical administration of the hospital, but the Board of Control, will lead to a better liaison between the Arizona Medical Association and the Arizona State Hospital.

Administration: Recently, Dr. Conway saw fit to resign and the hospital is now under the temporary direction of Dr. Samuel Wick, previously, Director of Education at the institution. Since taking over as Director of the hospital, Dr. Wick has prepared a letter, to all Judges of the Superior Court, relative to informing the County Physician, or the physician in charge, when a patient is being discharged from the Arizona State Hospital, and also, making available to any physician in charge of such a patient, the complete clinical record, or a summary thereof, for his future use. The Superintendent will, in the future, furnish the Clerk of the Superior Court, immediately upon discharge of any patient, notification of discharge instead of doing this on a monthly basis.

Improvements at the State Hospital: The new buildings will be ready for occupancy in April or May, 1954. These consist of a 200-bed treatment building providing an open type ward; a 100-bed tubercular building; and another new building to house 100 seniles of both sexes. This will greatly improve the over-crowded situation at the hospital.

LEGISLATION

The Arizona Psychological Association is in the process of presenting a bill for the licensing of psychologists in Arizona, but no specific bill has been introduced to our knowledge. We have written to the Committee on Mental Health of the American Medical Association, regarding a proposed meeting of their committee with representatives of the state associations and county societies, as it was thought, possibly, a member of the Arizona Medical Association might attend. This letter has not been answered and, to our knowledge, no date for such a meeting has been set.

It is the opinion of the Sub-Committee that certification of psychologists "per se" would not be objected to; however, the practice of clinical psychology would have to be limited requiring these individuals to practice under the direction of a physician, preferably, a psychiatrist or a neuropsychiatrist. Dr. C. N. Beganz, in a letter dated October 28, 1952, expresses this as follows:

> "To put it very briefly, we have found that the psychologists here will not settle for anything less than licensure to practice psychotherapy without supervision. We in New Jersey consider this to be the practice of medicine and have followed the suggested lead of the Council of the American Psychiatric Association that we attempt to obtain legislation in making the practice of such psychotherapy part of the practice of medicine and requiring the individuals who practice medicine to be licensed as physicians. We are also following the lead of the American Psychiatric Association to cooperate with the psychologists in that they be certified by a board of their own. To date, they have taken no interest in the matter of certification."

Representatives of the Council of the New Jersey Psychiatric Association, in December, 1951, believed the Medical Practices Act should be revised (a copy of this resolution is attached). We are in accord with this modification if such is possible.

PROGRAMS FOR EDUCATION

The programs offered for use by the county societies by the Arizona Psychiatric Association and on file with the Arizona Medical Association, have met with no requests from the various organizations or from civic groups. It is planned to revise this list of subjects in the hope that, perhaps, some call will be made for them.

CONCLUSIONS

Greater liaison with the State Hospital is going to definitely improve the relationship with the Arizona Medical Association. No important legislation is now pending although further revision of the Commitment Code could possibly be noted.

Respectfully submitted,
Ernest A. Born, M.D., Chairman
Lindsay E. Beaton, M.D.
Richard E. H. Duisberg, M.D.
John R. Green, M.D.
William B. McGrath, M.D.

March 1, 1954

Resolution of the Council of the New Jersey Neuropsychiatric Assn. December, 1951

WHEREAS, it has become apparent that the public health is being jeopardized by medically untrained, uneducated and unethical individuals often posing as "Doctors" who render treatment to persons with mental illnesses, diseases or other mental aberrations and, whereas, this injury to public health occurs as a result of delaying the time in which adequate and efficient treatment can be instituted; and further, indi-

viduals ill with physical conditions are, with increasing frequency, being treated by unqualified persons for mental illnesses, diseases or other mental aberrations and; whereas, the current Medical Practice Act of the State of New Jersey does not include as the practice of medicine the legitimate activity of duly licensed Doctors of Medicine practicing Psychiatry in the State of New Jersey;

THEREFORE, it is the considered opinion of the New Jersey Neuropsychiatric Association that it is imperative, if the public welfare is to be protected, that the Medical Practice Act, Chapter 9, Title 45 of the Revised Statutes of New Jersey, be further revised as follows:

A. *What Constitutes Practice.* Any person shall be regarded as practicing the healing arts and some school or branch thereof within the meaning of this chapter who opens an office for such purpose, or advertises or announces to the public in any way a readiness to practice in any county or city of the State, or diagnoses the condition of, prescribes for, gives surgical assistance to, treats, heals, cures or relieves persons suffering from injury or deformity or disease of mind or body, or advertises or announces to the public in any manner a readiness or ability to heal, cure or relieve those who may be suffering from any human ailment or infirmity, or who uses in connection with his name the words or letters "Doctor", "Dr.", "M.D.", "D.O.", "D.C.", "Healer", or any other title, word, letter designation intending to designate or imply that he is a practitioner of the healing arts or of any school or branch thereof, or that he is able to heal, cure or relieve those who may be suffering from any injury, deformity or disease of mind or body.

The provisions of this section applicable to persons shall also, to the extent applicable, apply to groups of persons and to corporations.

Except where persons other than physicians are required to sign birth certificates, signing a birth or death certificate, or signing any statement certifying that the person so signing has rendered professional service to the sick or injured, or signing or issuing a prescription for drugs or other remedial agents, shall be prima facie evidence that the person signing or issuing such writing is practicing the healing arts and some school or branch thereof within the meaning of this chapter.

B. Section 18.1 of Chapter 9 be revised as follows:

Provisions not applicable to the practice of healing. This chapter shall not apply nor shall it in any manner be constructed to apply to persons practicing healing by spiritual or religious means if no material medicine is prescribed or used or no manipulation or material means are used.

THE ARIZONA MEDICAL ASSOCIATION, INC. ANNUAL REPORT OF PUBLIC RELATIONS BOARD

The President of the State Medical Association made the following recommendations regarding the Public Relations Board on May 24, 1953:

(1) That the Board of Public Relations be enlarged from its current membership of seven to a total of nine. Three members to be appointed from the Maricopa Society, three from the Pima County Society and three from the remaining outlying districts. This recommendation was carried out and the following membership was drawn up.

Dr. Lindsay E. Beaton, Tucson
Dr. Donald F. De Marse, Holbrook
Dr. Leo J. Kent, Tucson
Dr. Carlos C. Craig, Phoenix
Dr. Fred W. Holmes, Phoenix
Dr. Howard C. Lawrence, Phoenix
Dr. Zenas P. Noon, Nogales

It was further recommended that there be a Chairman from one of the two heavily populated districts and a Vice Chairman from the other. This was accomplished with the appointment of Dr. Leo J. Kent as Chairman and Dr. Howard C. Lawrence as Vice Chairman.

(2) It was recommended that the board be requested to convene as a whole at least once annually, if not oftener, to determine policies and procedures and to relay such recommendations as they may wish to the Council.

(3) That the Council take an active interest in the conduct of this board.

Throughout the past year the President's recommendations have been carried out. There have been two meetings of the entire board and there has been a close relationship between the Board of Public Relations and the Council.

The first meeting of the Public Relations Board was held in Tucson, Arizona, on July 26, 1953.

A brief summary of the proceedings of that meeting follows:

The possibilities of Radio and Television programs as a medium of improving public relations throughout the State were thoroughly discussed, and it was unanimously voted that the Public Relations group go on record as approving this type of medium as a definite benefit to the public and to the Arizona Medical Association. It was learned that the Association television program in Phoenix was discontinued because of contract difficulties. However, our program, "THE M.D.'s NOTEBOOK" is expected to return to the television screen over Station KPHO-TV, Channel 5, Phoenix, March 5, 1954. The Pima County Medical Society instituted a weekly half-hour television program beginning in October, 1953, and to date has had a series of twenty-six such programs. These programs have been well received throughout the County and many favorable letters and reports have reached not only the studio but the Pima County Medical Society headquarters. It is the feeling of the Public Relations Board that this has been a definite value in this community, and it is our hope to continue with the series during the next year along with our program in Phoenix. The possibility of expanding radio outlets through a taping of these programs was thoroughly discussed, and Mr. Carpenter was authorized to investigate these possibilities and also to investigate whether or not the State Medical Association should take over the business of possibly holding these tapes in the development of a library.

The question of Arizona Medical Association exhibits at the Arizona State Fair was discussed, and plans were laid for the necessary steps to be taken to include this exhibit in the fair for 1953.

The second meeting of the Public Relations Board was held in Phoenix, Arizona, November 8, 1953.

The entire body met and visited the Arizona State Medical Association exhibit at the State Fairgrounds in order to have first-hand knowledge of the type of exhibit being presented.

Inasmuch as this was the opening day of the fair, it was felt by the group that corrections and/or ommissions could be carried out in order to make the exhibit more successful. It was the feeling of Mr. Carpenter and your Chairman that the Arizona State Medical Association exhibit at the Arizona State Fair was highly successful. Approximately 54,000 pamphlets of a medical nature were distributed and the number of visitors to the exhibit compared favorably with some of the most popular exhibits at the fair. The exhibit was entitled "Mechanical Quackery" and consisted of an expose of the mechanical diagnostic and treatment machines as they are used by various unscrupulous groups on the general public. The majority of the public visiting our exhibit expressed amazement and gratitude for the opportunity to review the quackery, and it was our feeling that we rendered a definite service. The Council had authorized an addition $1,000 expenditure for the exhibit, and I am happy to report that somewhat less than the $1,000 was used in the final display. The figures are included in Dr. Yount's report. The American Medical Association furnished the entire exhibit and supplied Mr. Oliver Field, who is in charge of the American Medical Association Investigation Bureau, to lecture during the course of the exhibit. He was present at the exhibit for long hours, and he and Mr. Carpenter devoted a great deal of time in making this a success.

It is the plan of the Public Relations Board to establish an endoctrination brochure for new doctors starting practice in the State. The exact content of this brochure to be distributed to incoming doctors has not been finally determined. It shall include such things as a message of welcome from the President of the Society, membership applications, insurance benefits, public service agreements and such aids as are necessary for the setting up of practice in the State of Arizona. It is our hope to have this brochure in the hands of the new physicians sometime in the near future.

It was reported that the loan of $2,500 made by the Board to J. N. McMeeken, contract publisher of the Health Activities Bulletin of the Association, now discontinued, has been fully satisfied with interest at 6% totaling an additional $175.

With the public distribution of the remaining supply of the "Your Doctor" pamphlets during the Arizona State Fair exhibit questions were raised as to the desirability of re-editing and republishing it, but this request was turned down by Council. However, in its place a pamphlet was approved by this Board which is similar to those produced by the Vandenberg County

Medical Society of Indiana. It invites the doctor's patients to discuss frankly with him any question regarding his services or fees. Samples of this pamphlet were approved by the Board of Public Relations and initial printing is underway. The pamphlets will probably be available for distribution by the time of the State Meeting.

Discussion ensued as to whether or not there should be developed a State press-radio code of cooperation. It was the feeling of this board that there should be a definite code which covers our cooperation with the press, radio and television. Several conferences with the press have already been carried out in Pima County, and the Maricopa County press-code relationship was reviewed by the Board, and it was felt that this should be done on a State level. Further meetings will be held during the State Association meeting in April, and a definite press-radio and television code of cooperation plan will be set up.

The Scientific Assembly Committee of the Association has agreed to meet with members of the Public Relations Board at a press conference following each morning and afternoon session of the scientific meetings during the State Association meeting. The guest speakers will be interviewed by members of the press and members of the Scientific Assembly and Public Relations Committee will be present in order to avoid misquoting and distortion of facts as presented by the speakers. In this way it is hoped that favorable publicity will be gained for the meeting and that we will avoid unfortunate statements in the press and on the radio. These committees have been set up and will function at your State meeting in April.

Request for "Your Doctor", a 16 mm. film, has to date been very encouraging. Within the past few months over eleven high schools throughout the state, together with a number of Civic Organizations have requested its showing among their respective groups. This film was purchased by the Public Relations Board early in 1953 as a medium to improve public relations. It is requested by the Public Relations Board that further efforts be exerted in order to use this medium of public relations in your local areas.

A letter of recognition and appreciation for the contribution in excess of $10,000 representing one day's receipts from each member of the State barbers' organization donated to the Crippled Children's Society was authorized and forwarded by this group.

A letter was received by Dr. David C. James and Dr. Herbert L. Stanke, Director of the Fo'sonous Animal Research Laboratory, Arizona State College, Tempe, Arizona, in which he requests that a Research Fellowship be established for a part-time employment student to test the effects of chemo-therapeutic substances on venom obtained from scorpions. He has learned, for example, that demorol has synergistic effect on the venom from the scorpion. The letter was referred to the Phoenix members of the Public Relations Board who are to constitute a committee to meet with Dr. Stanke regarding the possibility of establishing this fellowship.

The 1952-53 public relations budget was for $2,000 plus an additional $1,000 granted by Council for the exhibit at the Arizona State Fair. As stated above this additional $1,000 was not entirely expended, but in view of our planned expansion in radio and television programs it is requested that $3,000 be appropriated for the Public Relations Board for the year 1953-54.

Respectfully submitted,
Leo J. Kent, M.D.
Chairman

March 1, 1954

THE ARIZONA MEDICAL ASSOCIATION, INC. ANNUAL REPORT OF THE EDITOR-IN-CHIEF

No serious problems with the magazine have arisen this year. Usually it has appeared on time, and this is due in large part to observance of the deadline by most contributors. There is room for some improvement, however, and I urge all contributors to keep this in mind.

Your Editor and Mr. McMeckin attended the meeting of the State Journal Advertising Bureau of the American Medical Association at AMA Headquarters in Chicago in December, 1953. Much useful information was absorbed, and you may note changes in Arizona Medicine from time to time, in the way of improvement we hope, as a result of this conference. It was gratifying to receive a goodly number of favorable comments regarding our journal and to find that it rates well among state journals.

The journal received the 1953 Award for General Excellence of Magazine in Trade and Indus-

try awarded by Blake, Moffit & Towne Paper Co. Judging was by the School of Journalism, University of Southern California.

We urge all members of the Association to be always on the lookout for scientific material for publication. It is impossible for your Editor to attend all seminars, staff meetings, conferences and other medical meetings held in the state, so whenever and wherever you hear a good paper or presentation, by all means urge the essayist to submit it for publication in Arizona Medicine.

Your comments and suggests are always welcome.

Respectfully submitted,
R. Lee Foster, M.D.
Editor-in-Chief

February 26, 1954

THE ARIZONA MEDICAL ASSOCIATION, INC. ANNUAL REPORT OF THE SECRETARY

Since April first of last year, 69 new members were admitted into our component county medical societies and this Association, as follows: Cochise 3; Coconino 5; Gila 1; Greenlee 2; Maricopa 34; Pima 16; Pinal 4; Santa Cruz 1; Yavapai 1; and Yuma 3. There are at the present time 746 members in the State Association, compared with 705 at this date last year. Membership by county is as follows:

Apache	3	Mohave	2
Cochise	23	Navajo	6
Coconino	14	Pima	215
Gila	18	Pinal	20
Graham	6	Santa Cruz	8
Greenlee	9	Yavapai	19
Maricopa	380	Yuma	23

The 746 total membership figure is broken down into the following classifications: ACTIVE, 699 (including 16 Fifty-Year Club Members and 19 in Military Service); and ASSOCIATE, 47.

Council has held four meetings to date within the 1953-54 fiscal year; one on May 24, 1953; a second on August 9, 1953; a third on November 28, 1953; and a fourth on January 31, 1954, each in Phoenix of a full day's duration. This body is next scheduled to meet Sunday, April 25, 1954, in Chandler, during the sixty-third annual meeting. Each meeting was well attended, including representation from all quarters of the state, and the business of your Association continues to be handled with efficiency and dispatch. Undoubtedly the Chairman of Council will submit his report, including the major items discussed and action taken.

Legislation consumed considerable time and deliberation, and the Chairman of the Legislation Committee will likewise submit a detailed report on the accomplishments. Possibly the most important business before this committee during the year involved its cooperation with legislative representatives of the State of Arizona in the development of an improved health and sanitation code together with measures attempting likewise to improve the Tuberculosis problem of this state. Action is anticipated by the 21st Legislature. In this connection, I might add that the advice and direction of our legislative program by Mr. Edward Jacobson, our Association attorney, continues effective, and the prestige of the medical profession through his leadership has been enhanced immeasurably.

The Professional Board held two meetings, one in Phoenix, June 28, 1953, and one in Tucson, October 31, 1953, and this body has carried on a very active program in the conduct of postgraduate medical seminars throughout the state: one in the Northern District (Holbrook, Flagstaff, Prescott, in November, 1953), and one in the Southern District (Yuma, Florence, Douglas, Safford, in late February and early March, 1954). A detailed report of the activities of this Board has been prepared and will be available to the membership for review.

The Public Relations Board held two meetings, one in Tucson, July 26, 1953, and one in Phoenix, November 8, 1953. A report of its activities will be presented for review.

Only two meetings of the Grievance Committee were required to be held in the year 1953, one on January 18, 1953, the other on February 14, 1953, and two meetings have been held during the current year. While the case load has diminished appreciably during this period, it was that body's feeling that possibly the patients have forgotten the available service. No decision was reached as to appropriate methods of keeping the public informed short of advertising which was not viewed with favor.

Only one application for medical defense was filed with our Medical Defense Committee during the current fiscal year to date. While "Malpractice" suits continue to be filed in large numbers throughout the nation, Arizona is fortunate to have a reasonably favorable experience. The

year has seen the withdrawal of another major insurance carrier which has discontinued operations in Arizona. Several "group" malpractice policies held by other Associations in the country have been withdrawn, and the problem continues serious. There are approximately four insurance companies licensed in Arizona who continue to write malpractice coverage. Suits filed with them are usually in large amounts which is the national experience. Fortunately only a very small number have actually reached trial in 1953. Undoubtedly this committee will be struggling with this problem for some time to come.

The Scientific Assembly Committee has labored arduously during the year to develop an outstanding scientific program which will be presented during the coming convention.

The Publishing Committee carried on its functions throughout the year under the chairmanship of R. Lee Foster, M.D., who was elected by Council as Editor-in-Chief.

The Arizona Advisory Committee to the Selective Service System continued its operations through the year. However, as the result of the cessation of hostilities in Korea, the Military Services have deferred calls of medical doctors, there being sufficient available concluding their medical education and internship to currently meet requirements.

In conclusion, it is my observation that the officers and Council of our Association, together with the members of our various boards and committees, have about completed another year of effective administration and accomplishments. Each is well aware of his responsibilities and has served with distinction and untiring energy. The administration of the business of this Association under the direction of the Executive Secretary and his staff continues to give a good accounting of its stewardship.

It has been my privilege and pleasure to serve you during the fiscal year, and I wish to take this opportunity to thank each and all of you for your continuing support, cooperation and indulgence.

Respectfully submitted,
D. W. Melick, M.D.
Secretary

April 1, 1954

THE ARIZONA MEDICAL ASSOCIATION, INC. ANNUAL REPORT OF INDUSTRIAL RELATIONS COMMITTEE

The Industrial Relations Committee respectfully submits the following summary of its activities in the past year. No change in the membership occurred, the committee consisting of:

Ronald S. Haines, M.D., Phoenix
Carl H. Gans, M.D., Morenci
Zenas B. Noon, M.D., Nogales
John R. Schwartzmann, M.D., Tucson
William B. McGrath, M.D., Phoenix (Chr.)

The new Medical, Surgical and Dental Fee Schedule was completed and became effective on August 1st, 1953.

Notable in the Fee Schedule is an attempt to clarify the general instructions. Their careful perusal (pages 4 to 6) by the physician and his secretary will forestall many misunderstandings and eliminate much unnecessary correspondence.

Next to be remarked is the unusual elaboration and itemization of the schedule itself. For obvious reasons, diagnostic or treatment procedures are topical, whereas, other schedules have mixed listings of diseases or injuries with resultant plus or minus inequities, varying with the needs of treatment.

Several members of the committee have appeared at medical society meetings to introduce the Fee Schedule and answer questions about it.

The committee continued its policy of acquainting itself with the working conditions of various industries. Our thanks are due the Western Cotton Products Company and the A-1 Brewery for assignment and courteous personnel who spent the greater part of a day showing us around and explaining the workings of their plants.

Each month, the Medical Advisory Board for the Arizona State Industrial Commission considered about six cases referred to it because of various complications or other difficult or undecided features. In each case, the records were reviewed and summarized; individual examinations of the patients were made; and a summary and recommendations were submitted to the Industrial Commission.

The committee, acting in similar capacity, analyzed and tried to arbitrate any differences of opinion between physicians and the Industrial Commission regarding fees or other matters. It is worth emphasis that almost invariably such differences arise out of failure of the physician to have familiarized himself with the schedule and especially with its general rules.

The Industrial Relations Committee has met with gratifying courtesy and cooperation from the commissioners (Messrs. B. F. Hill, J. J. O'Neill, F. A. Nathan, and A. R. Kleindienst) and their personnel and the medical referee, on the one hand; and from the members of the Arizona State Medical Society, on the other. We wish to express our sincere appreciation.

Respectfully submitted,

William B. McGrath, M.D.

Chairman

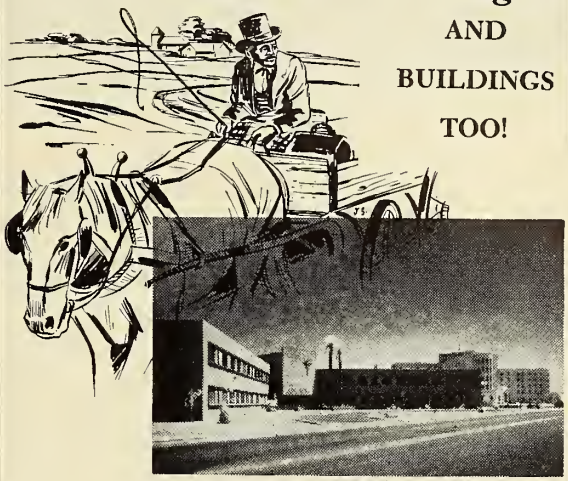
March 25, 1954

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Pima County Representative

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Interesting Topics

CHOLECYSTECTOMY

Thomas C. Douglass, Chicago, S. D. Journ. of Med. & Surg., November 1953. Indications and technic are discussed. Ten percent of the adult population of the United States has gallstones or are potential stone-bearers. The presence of stone with biliary colic and fatty dyspepsia are strong indications for surgery. The arc outlined. Technic of removal is discussed, arguments pro and con in acute cholecystectomy and then the causes for persistent symptoms after gall bladder removal.

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INFLUENZA VACCINE

A very live subject just now, so that the report of the Committee on Clinical Trials of Influenza Vaccine, of the National Research Council of England, – as given in British Med. Journ., Nov. 28, 1953, should be interesting to every doctor. They report the observations in field trials in the winter of 1952-53. In the main trial there was an attack rate of 3% in 6,340 volunteers, as against 4.9% in the control group of 6,370 volunteers. This is equivalent to a 40% reduction in incidence of influenza in the vaccinnated group.

———

ACTH and CORTISONE

Maybe there is nothing new to say about these drugs, but at least Robert C. Manchester, of Seattle, Wash., in Northwest Medicine for October, 1953, says the old things in a very readable and stimulating manner. "ACTH and cortisone cure nothing". But these agents modify local and systemic manifestations, while antibiotics attack the invading organism but fail to prevent the systemic manifestations of local injury. Therefore it is sensible to combine the two types of medication. The clinical value of ACTH, cortisone and compound F rests on the physiologic, anti-inflammatory and possibly anti-allergic actions of these agents. Then he discusses each of these effects. He discusses the exudative diseases for which cortisone and ACTH are used, and "they cure none of them." These include the collagen diseases. At the present time these drugs are used to modify the pathology and symptoms, letting the primary disease run its course. In the future they will be combined more and more with specific therapy and thus find their real place in medicine.

———

COMBINED THERAPY IN PULMONARY TUBERCULOSIS

How and when to combine and new drugs with streptomycin and PAS seems to bother many chest physicians and surgeons. The Medical Research Council of Great Britain, through their Tuberculosis Chemotherapy Trials Committee, has already published several reports (see Brit. Med. Journ. 1952, (2), 735; 1953, (1), 521; (2), 217; Lancet, (2), 213). Their latest report (Brit. Med. Journ., Nov. 7, 1953) gives their report on the comparison of two combinations, viz., streptomycin plus isoniacid and PAS plus isoniazid, used on a total of 391 patients in 50 hospitals, after three months treatment. Quite a detailed report given in which some important conclusions seem to stand out.

In previous reports it was found that isoniazid was an effective treatment of pulmonary tuberculosis, but when used alone resistant bacteria emerged frequently and rapidly. Therefore, it seems important to combine isoniazid with other drugs if the treatment was to be both clinically and bacteriologically effective.

Extended trial indicated that stat streptomycin (1. g. daily) plus isoniazid (200 mg. daily) was clinically the most effective anti-tuberculosis chemotherapy yet investigated, altho its superiority over streptomycin (1. g. daily) plus PAS sodium (20 g. daily) was not great. New information on the clinical efficacy of PAS sodium (20 g. daily) plus isoniazid indicates that this combination is a powerful addition to the acceptable drug treatment of pulmonary tuberculosis. Also the combination of streptomycin and isoniazid effectively hindered the emergence of bacilli resistant to either drug.

It is concluded, judging solely from the results at three months, the combinations of streptomycin and isoniazid and PAS plus isoniazid are equally effective.

ARIZONA *Pharmaceutical* PAGE

THE MEANING OF PHARMACY

OVER the century American Pharmacy has come to mean different things to different people in our changing economic order. To the retail druggist it means a method of serving the people of a community in one important phase of medical care from which both he and his clientele profit. To the wholesaler it means mass distribution and warehousing of important products for the conservation of life, while promoting the business interests of those who are engaged in this industry. To the manufacturer it means the development of new healing agents from the test tube stage to the finished medication, with the possibility of engaging in research that leads to new and useful drugs and the opportunity to reward stockholders and a great variety of scientists, administrators, and marketing specialists.

To the teachers of pharmacy it means an opportunity to train young men and women for a life work of interesting service to humanity with remunerative possibilities that are constantly improving.

To the regulatory agencies it menas exploration of procedures for policing professions and industries in the interest of the people as a whole and for the protection of those whose concepts of serving the people are on a high ethical plane as against those who would profit at the expense of the helpless.

To the public it means an indispensable service, which it must have closely at hand. Therefore, it subsidizes the retail pharmacy by using it as a source of a variety of commodities and services related and unrelated to medical care, so that it can be assured of pharmaceutical services at reasonable costs, if, as, and when needed.

In our modern age of atomic energy we have become accustomed to rapid and even revolutionary changes. As in the fields of physics and electronics, pharmacy over the past several years has produced truly outstanding changes. Modern progress in the fields of medical and pharmaceutical research and development have now reached the stage where approximately 1500 new drugs and combinations are being made available each year.

It is estimated that well over 60 per cent of the prescriptions compounded today were unknown 5 years ago, while over 80 per cent were not in use 10 years ago. To supplement these modern advances in pharmaceutical products, the pharmacist must continue to have available the thousands of older drugs which have stood the test of time and have proven to be of value. No longer is it necessary to employ "shotgun medication", containing 20 or 30 different ingredients, with the hope that one of the drugs in this combination might help. The so-called specifics of today have replaced the hopefuls of 30 years ago.

These new complex pharmaceutical products require a great deal more care and supervision in handling. Many require special storage facilities to insure that they maintain their strength. Your pharmacist's responsibilities are continually increasing for not only is he expected to compound, properly store and preserve these new drugs, but he must be extremely well acquainted with the usage and dangers of them as well.

Throughout America, in small towns and large, on crowded streets and quiet corners, the pharmacist himself represents his profession in his everyday dealings with the public. His is a great responsibility, as a key member of the health team, to assure you, and your family, of the finest in medicines. Today he looks ahead to the next century of achievement in his endless effort to bring better health to more people, through pharmacy.

THE Professional BOARD

POSTGRADUATE SEMINARS AND EDUCATION

Hugh C. Thompson, M. D.
Tucson, Arizona

DURING the past six months seminars have been conducted in seven of the smaller cities of this state, Holbrook, Flagstaff, Prescott, Yuma, Florence, Douglas and Safford. They have been spaced so as to give most of the physicians who practice outside Phoenix and Tucson an opportunity to attend without too great travel inconvenience. Most of the seminars have been for one day, although in Yuma and Safford, according to the wishes of the local societies, the seminars were for two days.

The seminars have been conducted by a Psychiatrist, and Obstetrician from the staff of the Utah Medical School in Salt Lake City, with a Pediatrician and Orthopedist from Arizona. Attendance and interest at all of these seminars have seemed good to those conducting them, and it is hoped that the members who attended feel that it is worthwhile.

Several interesting questions always arise when the question of planning the seminars arises. They represent one of the major outlays in both money, and effort of the association. Whether it would not be fair to charge each registrant at the seminars a small fee has been a subject of considerable debate. This year the Council felt that it was fair to offer something from the Association to the members outside the metropolitan areas. On the other hand, in this endeavor the Association is spending a considerable amount of money for the benefit of a relatively small percentage of the membership and even if the registrants did pay a small fee the Association would still be contributing a good deal of money as well as effort.

At the recent meeting of the Board further methods of postgraduate education were discussed. One, medical telecasts supplied by the University of Utah faculty, may soon be tried in Arizona. The membership will soon be circularized as to whether local specialty clinics or a telephone advisory service should be made available to the physicians in rural communities.

This year three of the Subcommittees of the Professional Board have given considerable time to educational activities. The Cancer seminar in Scottsdale, the exhibit at the State Meeting on Transfusion and Replacement Therapy in Infants and the Hard of Hearing program were the results of their efforts.

The opinions and desires of the members of the Association regarding these activities, together with any suggestions as to what they would like in the future, would be welcomed by the Board.

Organization PAGE

Medical Organizations and Lay Medical Groups are invited to submit news for this page to Norman A. Ross, M.D., Professional Building, Phoenix, Arizona.

On this page will be reported activities of lay and medical organizations that are a part of the physicians' citizenship responsibility.

UNITED CEREBRAL PALSY ASSOCIATION of Central Arizona, Inc., 106 North Central Ave., Phoenix, Arizona, announced the appointment of Richard Dowell Wetzel as its Executive Director, effective April 1, 1954. Their program is an individual one and is a complicated one due to the fact that for centuries cerebral palsy was shrouded in ignorance, superstition, and dread. Patients were neglected, ignored, ridiculed, and ostracized.

Only a few years ago the average age of afflicted children first seen by doctors was four to five years. Today some still are hidden away in back rooms and attics. But more and more are seen as infants of a year or less, and this is one of the primary encouraging factors developed through the educational program.

A survey discloses an estimated 550,000 living Americans were born with the affliction.

Some 10,000 babies per year continue to be born cerebral palsied—on every 53 minutes.

Other untold hundreds of thousands have become affected during later years of life. The total number of cases is constantly increasing.

A neuro-muscular disability resulting from injury to the motor centers of the brain, cerebral palsy knows neither preventive nor cure. Automobile accidents, industrial mishaps, strokes, and certain diseases contribute to the toll of this insidious crippler which, results in loss or impairment of voluntary muscular control.

There are 163 affiliates in 31 states. Local campaign dates correspond with the national drive, May 1 through May 31, 1954.

* * *

American Cancer Society, Inc., Arizona Division, 1429 North 1st Street, Phoenix, Arizona.

Arizona was represented on the 1954 Science Writers Tour by Julian DeVries of the Editorial pages of the Phoenix Gazette and the Arizona Republic.

Co-sponsored by the Arizona Division and the National Society of the American Cancer organization, Mr. DeVries is one of the few regional representatives on the Tour. For the most part, writers represented the Associated Press, United Press, International News Service, national magazines and other national news services.

Julian, winner of a distinguished public service award by the Maricopa County Medical Society in 1953, producer of "M.D.'s Notebook" on TV, and editor of "This Is Science" in the Phoenix Gazette, again proves the interest of our press in medicine.

* * *

Arizona Tuberculosis and Health Association, Inc., 111 East Willetta, Phoenix, Arizona.

The National Tuberculosis Association, the oldest National voluntary health agency, will consider "The challenge of the future" as it celebrates its fiftieth anniversary during the Association's Annual Meeting in Atlantic City, New Jersey, May 17-20, 1954. This pioneer organization came into being June 6, 1904 following the deliberations of 38 physicians called together by Dr. S. Adolphus Knopf in Baltimore, Maryland to consider the tremendous problem of fighting "the great white plague"—tuberculosis. Dr. Edward Livingston Trudeau, himself an ex-TB patient, was elected the first president at the organizational meeting in Atlantic City.

On May 22, 1909, just five years after the organization of the National Tuberculosis Association, "the Arizona Association for the Study and Prevention of Tuberculosis in affiliation with the National Association was organized." This organization followed the eighteenth annual meeting of the Arizona Medical Association. The Arizona Tuberculosis and Health Association (the present State constituent of NTA) and the Arizona Trudeau Society (Medical group)

(Continued on Next Page)

held joint Annual Meetings in April.

The Arizona Tuberculosis and Health Association and its 16 local affiliates welcome the active participation of physicians in its educational campaign to control tuberculosis in Arizona. Its pamphlets, posters, exhibits and motion picture films, and library, designed for lay and professional groups are available (gratis) on request from the office at 111 East Willetta, Phoenix.

The annual sale of Christmas Seals, supports this program—ninety four percent of funds remain in the State—and of the remaining six percent, which goes to the National Tuberculosis Association, one percent is specifically for research.

National Foundation for Infantile Paralysis, 120 Broadway, New York 5, New York.

The Third International Poliomyelitis Conference will be held September 6-10, 1954, at the University of Rome, Orthopedic Clinic, Rome, Italy, it was announced here by Basil O'Connor, president of the International Poliomyelitis Congress.

MEETING NOTICES

To stimulate interest in the field of physical medicine and rehabilitation, the American Congress of Physical Medicine and Rehabilitation will award annually a prize for an essay on any subject relating to physical medicine and rehabilitation. The contest, while open to anyone, is primarily directed to medical students, internes, residents, graduate students in the pre-clinical sciences and graduate students in physical medicine and rehabilitation.

For rules and regulations apply to American Congress of Physical Medicine and Rehabilitation, 30 N. Michigan Ave., Chicago 2.

ANNUAL ROCKY MOUNTAIN CANCER CONFERENCE

The Eighth Annual Rocky Mountain Cancer Conference will be held in Denver July 14-15, at the Shirley-Savoy Hotel. There is no registration fee for the conference, which is sponsored jointly by the Colorado State Medical Society and the Colorado Division of the American Cancer Society. The program will include eight guest speakers covering radiology, dermatology, surgery, urology, pathology, internal medicine and gynecology.

IN MEMORIUM

CHARLES W. SULT, SR., M.D.

The following Resolution was passed unanimously by the Maricopa County Medical Society at the March meeting:

WHEREAS, our Society was deeply grieved to learn of the death of Doctor Charles W. Sult, Sr., and

WHEREAS, Dr. Sult served the community faithfully and well from 1919 until he retired in 1949, becoming one of the leading physicians in Phoenix during his thirty years of service, and

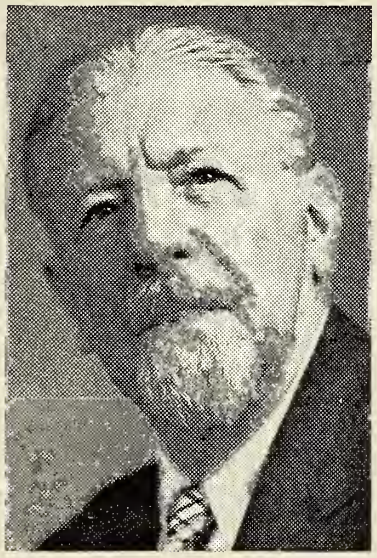
WHEREAS, as public health superintendent for the State of Arizona from April, 1931 until April, 1933, he will be remembered for working with the development of the first full time county health units, adding new counties to those already organized, and firmly establishing for the State of Arizona the organization and use of County Health Units—the same system now in use, and

WHEREAS, he was an active participant in community affairs, being a charter member of the Phoenix Chamber of Commerce, fourth degree member of the Knights of Columbus and life member of the Arizona Club, and

WHEREAS, his long record of service working for the betterment of the health of the citizens of the State of Arizona and the community has given much credit to the medical profession as well as to himself individually,

NOW THEREFORE, do we, the members of the Maricopa County Medical Society, hereby resolve that this Society spread upon its minutes and make known to the family of Charles W. Sult, Sr., its enduring respect of his personal character and professional proficiency, and its deep sense of grief at his death.

CLARENCE EDGAR YOUNT



With the death of Clarence Edgar Yount, M.D., F.A.C.S. in Prescott, on March 10, 1954 organized medicine in Arizona lost one of its most loyal and devoted servants. Not only did he serve the State Association continuously from 1913 to 1949 but he also served his County Society from 1905 to 1951.

Clarence Edgar Yount was born at Ft. Dodge, Iowa February 14, 1874 and was graduated from the Medical School at Georgetown University, Washington, D. C. in 1896, following which post-graduate training was taken at Columbia Hospital for Women and the Garfield Memorial Hospital in Washington, D. C. Coming to Phoenix, Arizona in February, 1902 because of ill health, he practiced briefly but moved to Prescott May 31, 1902.

Soon after his arrival in Prescott, he became actively interested in organized medicine and with the help of Dr. B. T. Davis, re-organized the Yavapai Medical Society, serving as secretary-treasurer in 1905 and 1906 and president in 1909. In 1911 he was elected secretary-treasurer of the County Society, holding this office continuously to 1951 except during the time he served his country during World War I. In 1913 he was elected secretary for the Arizona State Medical Association, serving in this capacity until 1919. Following his return from the war, he was elected president of the State Association and later served as treasurer from 1923 to 1949 when he resigned because of ill health.

In addition to his interest in State and local medical affairs, Dr. Yount was one of the organizers of the Staff of the Mercy Hospital and the Community Hospital and served the latter institution actively until 1949.

Dr. Yount joined the Arizona National Guard as First Lieutenant, July 13, 1907 and was called to active federal service on the Mexican border on May 9, 1916 where he served as Major commanding the medical detachment of the First Arizona Infantry (later the 158th Infantry). During World War I, he commanded the 169th Field Hospital and was assistant division surgeon of the 40th division serving overseas in France from August, 1918 to March, 1919. He was promoted to Lieutenant Colonel of the Medical Corps, February 14, 1919 and was retired to the Organized Reserve Corps as a Colonel.

Dr. Yount was a man of quiet and dignified demeanor, who dedicated himself completely to the problems of his profession. His passing will be felt as a great loss by his many friends.

Woman's AUXILIARY



Governor Howard Pyle; Frieda B. Erhardt, R.N., President of the Arizona State Nurses' Association; Mrs. George S. Enfield, President of the Woman's Auxiliary and Miss La Verne D. Timeche, senior student nurse, Good Samaritan Hospital School of Nursing, Phoenix. Governor Pyle, having just finished signing the proclamation declaring March 28-April 3, 1954 as Student Nurse Recruitment Week in Arizona.

NURSE RECRUITMENT

Mrs. Max Costin
Nurse Recruitment Chr.

"NURSING — the opportunity that knocks twice; sixty thousand professional nurses and sixty thousand practical nurses are needed this year." This was the theme for the auxiliary nurse recruitment program. In Arizona, we have four diploma schools of nursing for the professional nurse. Last year 217 students were admitted to these schools, an increase of 21 over the previous year. The number admitted represented approximately one third of the number of applications. This year we are hoping for a still greater increase.

The Arizona State Nurses Association and the Woman's Auxiliary to The Arizona Medical Association have joined forces for recruitment and a State Committee on Nursing Careers formed. Three members of either organization make up the committee, and act as an advisory group to the counties.

A concerted effort was made by the county committees on nursing careers to reach all girls interested in nursing this coming year and to

prepare the future nurse for her job. Programs were held in the high schools and junior high schools and our films "Girls In White", "Keeper of the Lamp", and "When You Choose Nursing" were shown. This was followed by discussion periods, and in addition 10,000 brochures "Your Opportunity To Become A Nurse In Arizona" were distributed, along with other National pamphlets. Similar programs were planned for church groups and social clubs, with Maricopa County leading the way for a more complete coverage of these groups. Student nurses from Good Samaritan Hospital and Flight Nurses from Williams Field presented several entertaining skits during an evening sponsored by the Pinal County Medical Auxiliary—an extremely well received program.

Several programs have been planned for high school and junior high school counselors, in an effort to acquaint them with the various types of nursing schools; their entrance requirements; and the scholarships and loans available.

March 28 to April 3 was proclaimed Nurse Recruitment Week by Governor Howard Pyle, and the week was highlighted by Open House held by the four schools of nursing in the State. The outlying counties were invited to participate and the Auxiliaries helped with transportation and refreshments. Prescott Community Hospital and Yuma Hospital held Open House for their communities. During this week many stores throughout the State had window displays, consisting of National posters and student and graduate nurse uniforms. One store had a display of caps representing various schools of nursing. We had excellent cooperation from the press, radio, and television stations.

The National Committee on Nursing Careers feels that the Future Nurses Club is the key to a really successful nurse recruitment program. In Arizona we have 10 clubs and 3 in the process of being organized. Most of these clubs are sponsored by school nurses with the medical auxiliary assisting with the program when needed. However in county schools and in parochial school where the nurses are part time, the auxiliary could be most helpful. In 16 Western states, only one parochial school has a Future Nurses Club. The purpose of these clubs is to interest students in personal and community health; to encourage them to find out what nursing requires and offers; and to help them decide wisely about nursing as a career.

Mrs. Irene Miller, national representative from the Committee on Careers praised the Future Nurses Club at Tucson High School as having an outstanding program. The Club was organized by Mrs. Ada Metz, school nurse. The students are required to take the Red Cross Home Nursing course. The Red Cross furnishes the instructor for the classes, which are held after school hours. The members are issued the Red Cross certificate and pin after completing the course. Some of these students work on Saturdays. They were given eight hours on the wards at St. Mary's Hospital for two hours of theory at the Hospital and now work in Central Supply and Pediatrics, feeding the children, or keeping them entertained. These girls have purchased uniforms with the Future Nurses Club emblem thereon, and they are given honor credit by the High School for hours served at the Hospital.

Some of the other activities of the Club are, field trips to health agencies; films on nursing; and speakers from various fields of nursing. Members of the Club are building up a reference library of brochures from schools of nursing throughout the country. The Future Nurses Club helps with civic affairs. During the recent Polio drive, they made cookies and sold them during school lunch period. They are now working on a project to raise money for the local YWCA. This past Christmas the members gave a party for the Pediatric Ward, trimmed a tree, made a stuffed animal and a marshmallow Santa Claus for each child. The FNC is serious in purpose but its members do have fun. They meet twice a month but on occasions a hayride, picnic, or swimming party is planned.

It is difficult to measure the success of the recruitment program, but three things have been gratifying:

1. Mrs. Irene Miller stated on a recent television program that Arizona was off to the best start on nurse recruitment of all the 16 western states she visited.

2. Since the recruitment program last year, the number of students leaving training during the first year, has dropped from 33% to 3%.

3. With the program in operation this year, the Directors of the schools of nursing say their telephones are buzzing with students asking for applications.

AMERICAN MEDICAL EDUCATION FOUNDATION

THE American Medical Education Foundation had its inception on January 24, 1951. In 1952 there were 6,080 graduates from medical schools, or 19.2% increase over 1940-41. The national population increased 16.4%, while in the same period of time medical enrollments rose 22.8%. The above figures prompt the thought of how the increased financial load is being carried.

Cost of training a physician during the 1930's was approximately $5,000. Now it takes $10,000. to $12,000. The tuition per students accounts for only 21.5% of the cost. Legislative grants, gifts, alumni funds and proceeds from fund-raising groups make up the remainder. The American Medical Association is the sole sponsor of the American Medical Education Foundation and has given $1,500,000 from its own treasury to the Foundation.

During 1953, the profession, business and industry contributed $1,089,962. Physicians made unrestricted contributions to their Medical Schools of $1,231,000. Dr. Louis H. Bauer, President of the Foundation, recommended that the campaign continue with a grass roots approach to the profession from the state and county level.

The National Foundation sent Memorial Cards to A.M.E.F. chairmen. These cards may be sent to the family of the deceased, stating that a sum of money has been given to the Foundation in the name of the deceased. This idea is too new for the full benefit of it to yet be realized, but should be kept in mind by the members of the Auxiliary.

Here in Arizona we have offered each doctor's wife the privilege of helping with this urgent campaign. Letters attempting to stress this point, along with 'Mite' boxes were mailed to Auxiliary members and non-members. A rummage sale in Pinal County netted $50.85. Yavapai County gave $25.00 or $1.00 per member. Reports from other counties are incomplete at this writing.

At present the problem is how to make each member realize how vital the success or failure of the campaign is to our way of life. Shall it be Freedom of Medicine through voluntary support or Socialized Medicine through Federal Aid?

Respectfully submitted
Mrs. J. B. Tucker
A.M.E.F. Chairman.

SESSION ON LEGAL MEDICINE AT SAN FRANCISCO MEETING

IN recognition of the growing importance of the many situations in which medicine may contribute to a clarification of medicolegal issues and of the interest and concern of physicians in such situations, there will be presented at the San Francisco meeting in June a Session on Legal Medicine in the Section on Miscellaneous Topics of the Scientific Assembly. This Session will be held under the immediate sponsorship and direction of the Committee on Medicolegal Problems which has arranged an informative program to include discussions on topics of practical value to practitioners who, whether they like it or not, will some day become personally concerned in a medicolegal involvement. The following papers will be presented.

Advice to the Medical Witness
W. I. Gilbert, Esq., President, Los Angeles Bar Association

Malpractice, an Occupational Hazard
Louis J. Regan, M.D.

Medicolegal Problems Related to Sterilization, Artificial Insemination and Abortion
J. W. Holloway, Jr., Esq., and Edwin J. Holman, Esq.

Prevention of Transfusion Accidents
Alexander S. Wiener, M.D.

Legal Aspects of Medical Partnerships
George E. Hall, Esq.

Trauma, Stress and Coronary Thrombosis
Alan R. Moritz, M.D.

This Session represents a practical and somewhat new approach to a solution of some of the situations in the medicolegal field that have caused, or that in the future may cause, uncertainty and possible embarrassment on the part of the physician. The program has been carefully arranged with that objective in mind and a physician will find much of value in the six papers. The meeting will be held on Thursday morning, June 24, in the White Room of the Masonic Temple located at 25 Van Ness Ave., and will begin at 9:00 a.m., and conclude at 12:00 Noon.

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ALL CONTRIBUTORS OF ARIZONA MEDICINE SHOULD HAVE THEIR MATERIAL IN THE JOURNAL OFFICE NOT LATER THAN THE 10th OF THE MONTH PRIOR TO PUBLICATION IN ORDER TO HAVE ARIZONA MEDICINE REACH ITS READERS ON OR BEFORE THE 10th OF THE MONTH

Material arriving after that date will be published the following month.

BOOK REVIEWS

THE NURSING MOTHER—A GUIDE TO SUCCESSFUL BREAST FEEDING by Dr. Frank Howard Richardson. Published-Prentice Hall Inc., 70 Fifth Avenue, New York 11, New York. 1953-204 pages. Price $2.95.

THIS little booklet is written specifically for mothers who really want to nurse their babies, and as such is an authoratative argument in favor of breast feeding. For the laity it is recommended, and answers all pertinent questions about the subject. W.H.C.

LIVING WITH A DISABILITY by Howard A. Rusk, M.D., and Eugene J. Taylor, M.D. Published 1953 by the Blakiston Company, Inc., 575 Madison Avenue, New York 22, New York. Price $3.50. 207 pages, over 250 illustrations.

THIS exceptionally fine volume by the eminent Dr. Rusk and his associate at the Institute of Physical Medicine and Rehabilitation New York University-Bellevue Medical Center, offers a means whereby the physically handicapped and their families may learn to adapt themselves to their shortcomings and disabilities. By text and picture it is an outstanding work for patients and those in the field of physical medicine and rehabilitation. W.H.C.

IMPATIENT PATIENTS UNDER SOCIALISM

Something new has popped up under Britain's socialized medicine scheme.

Writing in the Chicago Daily News, London Correspondent Ernie Hill says that under the British health service, patients have now discovered that they can sue the government if they don't get well.

Under the legal aid scheme, which is a separate Socialist institution, they can get the government to furnish them a free lawyer to handle their suit.

If they win, the government pays off. If

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they lose, the court costs still have to be paid by the government. "So have a go," Hill says. "It's all on the welfare state."

He adds that a rash of lawsuits against hospitals under the National Health Service has broken out all over the place.

"Medical authorities," he said, "estimate that some 200 suits for damages have been filed in the last three years."

A CHEST PHYSICIAN LOOKS AT LUNG RESECTION FOR TUBERCULOSIS

Usually chest surgery and its results are evaluated by the surgeon who carried out the surgical procedures. In a paper on "The Present Status of Lung Resection for Pulmonary Tuberculosis," in British Medical Journal for Feb. 7, 1953, F. H. Young, M.D., F.R.C.P., D.P.H., Physician to Brompton Hospital and other hospitals, undertakes to evaluate the results of lung resection carried out by five surgeons,—at the end of two years or more. The opening paragraph of his paper is a dramatic beginning for his discussion:

"In few conditions is there such a difference in the point of view of physicians and surgeons as in the treatment of pulmonary tuberculosis. For the part played by the surgeon is that of the character who comes into the play fairly late, monopolizes the most dramatic scene, and then takes little further active part on the play; whereas the physician is on the stage from the rise till the fall of the curtain."

(NOTE:—It should be said that the term "character" as used by this British writers does not have the uncomplimentary connotation in which American writers might use it.)

Young discusses the indications, contraindications, complications and final results in a highly interesting manner. He hews to the line and let the chips fall where they may,—in discussing the surgical patients of five surgeons. One paragraph in his conclusions will bear quoting:

"It can be claimed, however, that this paper does confirm the opinion that in resection we have a method by which many cases unsuitable for any other form of surgical treatment can be rendered quiescent; a high proportion (64% of 58 cases) who would be dead or hopeless invalids have been rendered quiescent with a good prospect of ultimate arrest of the disease."

WHY SOLID FOODS FOR NEWBORN?

Frank H. Douglas, Northwest Med., October, 1953. With regard to solid food for the newborn, this author is like the preacher in Washington, D. C., giving a sermon on "Sin" to a congregation which included President Coolidge. When asked what the minister had to say about sin, the President replied, "He was agin it." He says "the average healthy newborn, fed a formula simulating breast milk, will be happy and gain to double its birth weight in four months. No other food is needed for the first three months." Addition of cereal, vegetable, fruit, meats and other substances in no way improves the health or well being of the baby."

Interesting Articles In Journals Available At the Maricopa County Medical Library In Phoenix

Rheumatoid Arthritis,—Use of Cortisone and ACTH. Observations on 52 patients, discussing many phases of the use of these drugs. The New Eng. Journ. of Med., Oct. 15, 1953. Article by Clark, Tonning, Kulka and Bauer, from the Dept. of Medicine, Mass. Genl. Hosp.

Enzymes in Clinical Medicine. Review by Henry J. Tagnon, in The New Eng. Journ. of Med., Oct. 15, 1953. There is a rapidly growing interest in this field, and some of the recent developments are briefly discussed. An excellent bibliography of 80 articles is appended to the review.

Intracardiac Surgery,—for Mitral and Aortic Stenosis. A fairly brief and very readable article by Robt. P. Glover of Philadelphia, in the South Dakota Journal of Med. & Surg., October, 1953.

Carcinoma of the Skin,—Treatment. Black and Jolly, Baton Rouge, La. Journ. of the La. State Med. Soc., October, 1953. The various modes of treatment are discussed. The overwhelming majority were treated by x-radiation alone,—but other methods of treatment in selected cases are discussed.

ARIZONA MEDICINE

Journal of ARIZONA MEDICAL ASSOCIATION

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TABLE OF CONTENTS

OFFICERS

ARIZONA MEDICAL ASSOCIATION, INC., DIRECTORY 6A
WOMAN'S AUXILIARY DIRECTORY 6A
COUNTY MEDICAL SOCIETY OFFICERS, 1954 DIRECTORY 27A

ORIGINAL ARTICLES

HYDATID MOLE AND CHORIONEPITHELIOMA 205
Henry A. Siegal, M.D., Phoenix, Arizona
PHYSICAL MEDICINE AND REHABILITATION 212
William J. LaJoie, M.D., Phoenix, Arizona
PHSYICAL MEDICINE MANAGEMENT OF THE TUBERCULOSIS THORACIC SURGERY PATIENT 214
Drs. Fred J. Sheffield and Robert A. Gregg, Denver, Colorado

MEDICAL PROBLEMS

PHOENIX CLINICAL CLUB 217
Drs. James R. Moore and Leslie R. Kober, Phoenix, Arizona

THE PRESIDENT'S PAGE

SUMMARY OF THE 1954 ANNUAL MEETING 228
Oscar W. Thoeny, M.D., President, Arizona Medical Association, Inc.

EDITORIAL

DITCH THAT DIATHERMY, DOCTOR! 229

LETTER TO THE EDITOR

SOCIALIZED MEDICINE IN EUROPE 229

TOPICS OF CURRENT MEDICAL INTEREST

RX., DX., AND DRS. 232
Guillermo Osler, M.D.

INTERESTING TOPICS —Recommended Reading In Current Medical Journals 236
W. Warner Watkins, M.D., Phoenix, Arizona
ARIZONA PHARMACEUTICAL PAGE — Code of Ethics 237
Arizona Pharmaceutical Page
ORGANIZATION PAGE 240
Norman Ross, M.D., Phoenix, Arizona
BASIC SCIENCE COURSE IN OTOLARYNGOLOGY 241
BOOK REVIEW — Review of Physiological Chemistry 241
CORPORATE PRACTICE OF MEDICINE 242
FOREIGN-TRAINED DOCTORS CREATING PROBLEM, CONFERENCE TOLD 242
INTER SOCIETY CYTOLOGY COUNCIL 243
NEWS NOTES 245

WOMAN'S AUXILIARY

REPORT OF THE CONVENTION CHAIRMAN 244
Mrs. Isabel A. Cruthirds, Phoenix, Arizona

DIRECTORY

LABORATORIES 27A
SANATORIUM DIRECTORY 29A
DRUGGISTS DIRECTORY 31A
PHYSICIANS DIRECTORY 33A

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HYDATID MOLE AND CHORIONEPITHELIOMA

A Five Year Survey of Cases in Three Phoenix Hospitals From 1947 to 1952.

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IT IS generally agreed that the greater is ones experience or familiarity with a given condition, especially a rare one, the more alert will he be in considering it in the diagnosis, and be better able to formulate definite ideas as to the proper treatment, aiming, to a more desirable result, with consequent reduction of morbidity and mortality.

The difficulties encountered in diagnosis and the variance of opinion with respect to treatment in cases of hydatid mole and chorionepithelioma led the author to survey the cases encountered in three Phoenix hospitals for a five year period (1947-1952) with a view to evaluating diagnostic methods, changing concepts in treatment, and hormonological interpretations. A follow-up of all cases, where feasible, was done.

It appears that the greatest single advance made with respect to diagnosis and treatment of hydatid mole and chorionepithelioma was accomplished with the introduction of the Ascheim-Zondek test in 1929 and the recognition of the tremendous concentration of the chorionic gonadotropic hormone in the urine and blood in these two conditions.

The striking reduction in mortality from these conditions since the advent of this test, namely 12% and 60% for mole and chorionepithelioma respectively before 1930, to 2% and 10% at present, attests to its real importance. However, in spite of these striking figures, it is indeed surprising that in many cases the test is rarely utilized to fullest advantage, and in many cases not even performed at all.

Mathieu(1) states that up to 1930, the diagnosis of hydatid mole rested practically on the presence of hydatid mole vesicles, the spontaneous evacuation of the mole, or by post-operative examination of tissues following curettage, and the diagnosis of chorionepithelioma was rarely or almost never made until metastasis had occurred. Even though diagnostic criteria are adequate, he feels that diagnostic acumen is lacking and maximum results are not obtained because of inertia on the part of the clinician or to non-acceptance of the newer criteria.

If more patients who abort would have the tissue passed subjected to microscopic examination, and also, if more curettages would follow these abortions, it would probably reveal a greater incidence of hydatid degeneration. In a recent study by Hertig and Edmonds(2) they showed that approximately 50% of all spontaneous abortions are due to defective ova, and of these blighted ova, over 50% presented hydatid changes in the villi. They believe that the etiology of mole is linked up with the interference of fetal chorionic circulation in these pathologic ova, producing the explanation for the absence of blood vessels and the edema of the stroma. They also believe that a typical hydatiform mole is derived from a true pathologic ovum in which the embryo was either absent or very defective from the beginning, and which, for reasons unknown, failed to abort at the usual time, moles constituting then a type of "missed abortion".

*Read, in part, before Second Annual Meeting of the Southwest Obstetrical and Gynecological Society, Tucson, Arizona, November 14, 1952.

Some authors (Graffagnino and Jeffreys)(3) maintain that because of the possibility of hydatid degeneration, which may not be elinieally evident, as well as to prevent infection and continued bleeding from retained produets of eoneeption, most eases of abortion before the third month of pregnaney should be followed by eurettage. They also believe that over-enthusiastie use of eorpus luteum is eontra-indieated beeause of the frequeney of hydatid degeneration of the ehorion in the presenee of an abnormal fetus or in the absence of a definite fetus.

Pathologically, a mole is a degeneration of the eonnective tissue of the chorionic villi plus a proliferation of the epithelium of the villus, both Langhans' eells and syncytium, with sometimes the formation of several layers of the former.

Sinee the gonadotropie hormone titer is exeeptionally high in both these eonditions, it would appear to offer a means of making earlier diagnosis, without waiting for spontaneous passage or needless and expensive treatment of threatened abortion. More important it offers means to be able to diagnose ehorionepithelioma without relying on diagnostie curettage or unwitting temporization with development of metastasis during the waiting period.

Many eonflieting statements have appeared in the literature from time to time with respect to the proper management of these two conditions, viz; the neeessity for routine curettage following molar expulsion, the manner of follow-up with the A. Z. test, espeeially as to frequeney and length of time they should be eontinued, the signifieanee of the "persistent positive" A. Z. test, as against the detection of a rising titer of gonadotropie hormone in the follow-up of mole. Also, some authors feel that the proper approaeh in the treatment of mole is by abdominal hysterotomy with digital and visual exploration of the uterine eavity to determine the existenee of a complieating ehorionepithelioma. Opinion also differs with respeet to the management of the lutein eystomata, whieh are present in about 50% of the eases of mole. The earlier texts advise their removal, but the trend reeently has been to allow them to resorb, regardless of their size.

The necessity for deey X-Ray therapy and length of time to be employed following extirpative surgery for ehorionepithelioma and whether or not A. Z. tests need be employed following surgery for ehorionepithelioma while X-Ray therapy is being used, is also controversial.

An attempt will be made to analyze the eases in the light of these eonflieting opinions with a view to determining the most rational procedure to follow, as well as to evolve a possible working basis for establishing an earlier diagnosis.

MATERIAL STUDIED

There were a total of 19 cases of hydatid mole in three Phoenix private hospitals between June 24, 1947 and April 8, 1952, with 6 eases at Memorial Hospital, 4 at St. Joseph's and 9 at Good Samaritan. There were 2 eases of ehorionepithelioma in this series, both at Memorial Hospital and both oeeurring in 1949. The total number of live births in the 3 hospitals from 1947 to 1951 inelusive, was 30,659, making a .061% ineidenee of mole, or 1 ease of mole in 1,614 deliveries and 1 ehorionepithelioma in 15,329 deliveries. The number of moles per year is as follows: 1947—2; 1948—0; 1949—7 cases (4 at one hospital); 1950—5; 1951—4; and 1 in 1952 thus far.

The age ineidence was 15 to 42 with the average age being 24 years. In two eases the age was not stated. There were 10 eases in the 20 years or younger group, 2 in the 26 to 30 age group, 1 in the 31 to 35 group, 2 were in the 36 to 40 group and 1 over 40.

There were 7 primigravidas and 12 multigravidas. The ineidenee was 36% in primigravidas, whieh, compared with other series reported(4, 5) represents a rather high ineidenee in this young group of patients. The 2 cases of chorionepithelioma were both in multiparas.

The history of previous abortions or abnormal pregnaney was extremely low, with only 2 of the multiparas having had pathology, one a previous full term stillbirth, and the other, 2 previous spontaneous abortions. This latter patient is signifieant in that her third pregnaney terminated in hydatid mole.

The average duration of pregnaney at the time of diagnosis of mole was 4.1 months. In 4 eases the pregnaney was felt to be far enough advanced with the uterus eorrespondingly enlarged that X-Rays of the abdomen for fetal parts were sought for but not demonstrated. Bleeding in the seeond trimester did not appear to east suspieion on hydatid mole.

Bleeding eonstituted the eardinal symptom in all the eases, varying from spotting to massive

hemorrhage. The duration of bleeding also varied from a few days before admission to as long as 6 months. Cramps accompanied bleeding in most cases. There was no appreciable elevation of temperature, except in one case, and no definite sepsis. No cases had been preceded by attempts at criminal abortion, according to the records. Only 2 patients reported having felt life. In one patient it was highly improbable, as the duration of pregnancy was 3 months and the uterus 4 cm. above the symphysis. This was the only patient exhibiting hyperpyrexia (102°F.), as well as toxemic manifestations of headaches, vomiting, hypertension and albuminuria. She expelled a mass in the hospital resembling mole and there was no evidence of a fetus. She reported the absence of quickening 2 weeks before passage of the mole. The other patient who stated she ceased feeling life for 1 week prior to admission was thought to be an example of intrauterine fetal death probably due to premature separation of the placenta, but the patient expelled a mole while preparing her for D. & C. In no case was fetal heart tone recorded. There was one case associated with a macerated fetus, which was removed during an abdominal hysterotomy for mole.

Toxemic manifestations were fairly infrequent in contrast to other reported series.(6). Only 3 patients exhibited this complication, the one patient cited above, who interestingly enough had toxemia with a previous pregnancy resulting in a stillbirth, another patient with vomiting during the entire 2 months of her mole pregnancy and the 3rd patient in a primigravida who had marked edema of the feet, legs and waist, B.P. 144/82, who expelled a mole 1 day after admission. In this mole the pathologist reported a definite overgrowth of syncytial trophoblasts and classified it as more "potentially dangerous". The association of early toxemic manifestations with this type of mole may have more than academic significance. There were no cases of true eclampsia.

Size of Uterus

The size of the uterus with respect to the duration of pregnancy was variable. In 7 patients the uterus was larger, whereas in the remaining 12 patients an equal number were smaller or of corresponding size. This represents a 63% incidence of disproportionately smaller uteri than expected and points up the lesser importance and lesser frequency of the disproportionately larger uterus. Of the 6 patients in which the uterus was smaller than for the corresponding amenorrhea, the duration of pregnancy in 4 patients was from 5 to 6½ months. It seems that those patients with the smaller uteri appeared to have a longer period of bleeding, in one patient for as long as 6 months, just as one would expect to see in missed abortion.

The incidence of frequent hospital admissions were not as great as expected, the chief reason probably being that all of them were private patients and nowadays with mounting hospital costs and overcrowding, most patients with threatened abortion are treated at home. In 3 patients re-admissions had to be made for recurrence of bleeding after molar evacuation by D. & C. 2 patients were re-curetted with no further recurrence of bleeding, and in the 3rd patient a hysterectomy was performed. In none of these patients were biologic pregnancy tests done.

It will be of interest to note here that in none of these patients did the pathologist report any evidence of retained mole tissue or chorionepithelioma. The hysterectomy was performed for a preoperative diagnosis of corpus luteum cysts and subinvoluted uterus.

The correct diagnosis in these patients was not made until mole tissue was either passed prior to admission, after entering the hospital or at the first inspection of the cervical os at the time of operation. The diagnosis in their order of frequency were: Threatened abortion, incomplete abortion, missed abortion, intrauterine fetal death due to premature separation of placenta, possible mole and possible ectopic pregnancy. In one patient the diagnosis was made after passage of vesicles following uterine bagging. The duration of pregnancy was 6 months in this patient. In no patient was the diagnosis made by the pathologist solely on the basis of tissue passed or on the curettings. All patients presented sufficient gross morphologic characteristics to warrant diagnosis and were substantiated by the pathologist. In 2 patients the diagnosis as well as treatment was effected by abdominal hysterotomy. In both these patients the diagnosis was suspected, however, but conditions present necessitated the abdominal approach. In one patient with the uterus disproportionately larger than 4 months pregnancy, marked bleeding was encountered on vaginal examination, and the cervix not being sufficient-

ly dilated, hysterotomy was elected. The other patient, a 38 year old grava iii, para ii, presented massive bleeding at 4 months, a mole was suspected, and with no response to pituitrin, and with a firm undilated cervix, an abdominal hysterotomy evacuated a macerated embryo which was found lying among grapes of mole tissue.

The biologic pregnancy test was not utilized in any of the patients to establish the diagnosis of mole. Perhaps if these patients had made earlier admissions to the hospital with more careful evaluation of their pregnancy, the diagnosis may have been suspected and possibly confirmed by the quantitative biologic tests. In many instances these patients had not presented themselves for prenatal care and the first inkling the physician had of the existence of pregnancy came at the onset of bleeding. Most physicians are reluctant to have patients in early pregnancy make a trip to the office when bleeding takes place. This undoubtedly accounts for delay in diagnosis as well as the opportunity to study the situation more carefully. The propriety of interfering with an otherwise normal pregnancy, with perhaps slight bleeding, on the strength of an abnormally high gonadotropic hormone titer is also conjectural, especially if the pregnancy is about 60-90 days, when the hormone titer is normally at its peak.

Lutein Cysts

In only 2 patients were definite lutein cysts present and in both cases they were bilateral. In one patient the ovaries were palpable abdominally, and in the other were apparently the basis for hysterectomy 3 weeks following evacuation of the mole by curettement. Toxemia was not associated here, nor was there any record of the Aschcim-Zondek test. In both these patients bleeding was present for 3 months, which serves to substantiate Mathieu's theory of the need for ample time for cysts to develop before evacuation of a mole.

Biologic Pregnancy Tests

A surprising lack of reliance on these tests is noted in this series. Whether or not tests were performed prior to admission is not known nor otherwise recorded. Inasmuch as all of these patients were followed by their respective private physicians, it is extremely likely that follow-up tests were done and repeated at frequent intervals. It seems hardly necessary to subject a patient to the cost of an A.Z. test immediately after passage of a mole and D. & C., with absence of further bleeding or other complication. A positive test within 4 weeks after passage without bleeding has little clinical significance. As no follow-up was possible here, no "persistent positive" tests have been detected, and no definite chorionepithelioma was known to develop in this series of mole patients. There were no biologic pregnancy tests on the spinal fluid.

D. & C.

In 14 patients dilatation and curettge was performed as the sole treatment. In 2 patients the procedure was repeated 4 weeks and 6 weeks later for recurrent persistent bleeding. In no patient did the biopsy of currettings serve to establish the diagnosis, the latter having been made either prior to the procedure because of expulsion or at the time of operation. In no patient did the curettings disclose chorionepithelioma or malignant mole, but one case was reported as "potentially more dangerous than simple mole". In the 2 patients that required repeat curettage, the pathological findings did not report mole tissue. However, in one patient the report indicated "atypical hyperplasia of the endometrium, with decidual reaction and syncytial giant cells", and the other "endometrium in late proliferative phase with minute extensions into bits of underlying myometrium". This report would suggest some degree of adenomyosis, and it is interesting to speculate here on the greater invasive propensity of a mole occurring in an adeno-myomatous uterus.

One patient passed a large mass 1 day prior to hospital entry and this was reported as mole. More tissue was expressed during pelvic examination and the patient was treated without D. & C., and sent home in 2 days. There is no record of her return. There were no complications of the procedure of dilatation and curettage and no perforations of the uterus occurred, either spontaneous or traumatic. In one patient most of the mole was expressed preceding the D. & C. by simple fundal pressure.

Surgery for Mole

Major surgery was performed on 3 patients (16%). In one patient, that of a 20 year old secundigravida who was originally treated by bagging followed by D. & C., after expulsion of a mole, returned with pain and vaginal bleeding 3 weeks later. The clinical impression was corpus lutein cyst and subinvolution of the uterus. She was subjected to total abdominal hysterectomy and bilateral salpingo-oophorec-

tomy. The pathological diagnosis was lutein cysts, the uterus thickened and hypertrophic, otherwise negative. No evidence of retained mole or chorionepithelioma. There was no record of biologic pregnacy tests in this case.

The second patient treated surgically was that of an 18 year old primigravda admitted with profuse vaginal bleeding. The uterus was about 6½ months in size, the duration of pregnancy, 4 months. Hydatid mole was suspected, and other possibilities were single or multiple pregnancy with premature placental separation. X-Ray showed a soft tissue mass, to level of 2nd lumbar, without bony densities therein. Sterile vaginal revealed vagina filled with dark black clots and the cervix barely 1 cm. dilated, but rather well effaced. Clots could be felt inside the cervix and after removing the examining finger, a large gush of dark blood followed. Patient was then prepared for laparotomy. The uterus approximated the size of a 7 months pregnancy. A low cervical Cesarian section was performed and on opening the uterus great quantities of bloody grape-like material was aspirated completely filling a large wash basin. Remnants of this tissue were removed as well as possible and then the uterus tightly packed with 2" gauze with the free end passed down through the cervix into the vagina. Usual repair. Patient made a good recovery and was discharged in 8 days.

The large size of the uterus in this patient undoubtedly betokened a pathological complication of pregnancy other than mole as attested by the low cervical approach. A hysterotomy type of incision would have effected a better inspection of the incised wall of the uterus with a much simpler means of evacuation and exploration of the uterine cavity.

The 3rd patient treated surgically is somewhat unique. A 38 year old Grav. iii, Para ii was admitted for the second time for vaginal bleeding. She was in the 4th month of pregnancy and developed a severe hemorrhage the day of admission. Pituitrin was of no avail. The uterus was at the level of the umbilicus. The cervix was undilated and uneffaced. Hydatid mole was strongly suspected and abdominal hysterotomy seemed the best procedure. Body of the uterus was opened in the midline, mole encountered and evacuated. A macerated embryo was present among the grapes of mole tissue. Usual closure. Uneventful recovery. She made her next admission in March 1951, 3½ years later when 2 months pregnant, complaining of a metallic taste which patient believed suspicious of cancer. She was obscessed with the belief that this was another mole and that it may well be or become malignant. Opinion expressed by the obstetrical consultant was intrauterine pregnancy with anxiety neurosis and he advised "therapeutic abortion in the interests of patient's welfare". The attending obstetrician felt that there was some presumptive evidence of a new mole, and coupled with the extreme anxiety of the patient to the point of being terrified, a hysterectomy seemed indicated. Preoperative diagnosis also included retroversion and chronic cervicitis. Total hysterectomy and appendectomy performed. Path. report: Gravid uterus with 25 mm. fetus, placenta and membranes. Rapid recovery, including improvement of mental state.

Subsequent Pregnancy

There were a total of 6 pregnancies following mole, 2 of them in one patient. Inasmuch as this represents the number of pregnancies in 16 cases in the past 5 years, with the most recent mole in April 1952, the incidence of subsequent pregnancies is fairly high. All the subsequent pregnancies were normal deliveries at full term. There were no recurrent moles and no subsequent abortions.

In only one patient had an X-Ray of the chest been taken before discharging a mole patient home. This proved to be negative.

There was no mortality in this series.

Chorionepithelioma

There were 2 cases of chorionepithelioma. Both occurred at the same hospital, and both in 1949:

Case 1.

A 25 year old white female was admitted to Memorial Hospital (then St. Monicas), on May 21, 1949, with a history of vaginal bleeding a few days prior to entry. She was a Grav iv, Para iii, and was presumably pregnant, her LMP having been 3-23-49, and was now about 3 weeks late. Her past history disclosed an appendectomy 5 years previously and a D. & C. 2 years previously, cause undetermined. Admission temperature 100°F., pulse 90 and B.P. 110/80. The abdomen was soft and flat with tenderness over hypogastrium.

The diagnosis was incomplete abortion on the basis of the history. A vaginal was not done. On 5-24-49 a D. & C. was performed and numerous irregularly shaped fragments of dark

reddish brown spongy tissue varying in size and shape was obtained, along with numerous blood clots.

Pathological report revealed an "endometrial-like tissue in which the stromal cells present an atypical appearance. Many of them resemble squamous epithelium. In other places there are characteristic syncytial cells growing in irregular sheets noted. Langhan's cells arranged in small groups and multinucleated giant cells are found throughout the tissues and in many of the sinuses. In some places the tumor masses lie loosely. In other places they are adherent to the walls. Fibrin masses are also found to be mingled with the tumor cells. In many areas there is considerable variation in size, shape and staining capacity of the cells and the nuclei are hyperchromatic and present large nucleoli. Diagnosis: Choriocarcinoma of the uterus".

On May 26, 1949, a total abdominal hysterectomy and bilateral salpingo-oophorectomy was performed. Gross Description: On opening the uterus anteriorly and into the horns, the endometrial surface was found to be thin, but irregular and ragged in the region of the fundus. There is an area of infiltration into the myometrium. It is reddish brown in color and measures .5 cm in diameter. Cervix showed no gross pathology. The ovaries were negative except for a small corpus luteum in one. Tubes likewise negative. Microscopic: Uterine sections revealed a marked alteration of the endometrium. The uterine wall is lined by a necrotic tissue which is diffusely and intensly infiltrated with lymphocytes, plasma cells and numerous polyps. Large blood vascular channels are packed with RBC's. Here and there, clumps of atypical, large epithelial cells presenting hyperchromatic nuclei and an occasional mitotic figure are seen. Some of these are found infiltrating the myometrium.

In many sections the endometrium presents a decidual-like reaction of the stromal cells. The gland acini are lined by hyperplastic and hypertrophied epithelial cells presenting hyperchromatic nuclei. The fibromuscular stroma of the uterus is edematous and presents focal areas of hyperplasia of the stroma, which is also edematous. There is also hypertrophy of the muscular elements of the myometrium. No evidence of tumor implatation or metastasis are seen in the ovaries."

Pathological Diagnosis: Choriocarcinoma of the uterus.

An X-Ray of the chest was negative on May 31, 1949. She went home recovered on June 6, 1949.

Personal communication with the attending physician in this case reveals patient to be in excellent health and steadily employed.

There was no record of biologic tests before or after surgery.

Case 2.

A 36 year old Grav iii was admitted to Memorial Hospital on 8-10-49 with a working diagnosis of bleeding submucous fibroid.

History revealed no previous surgery. Menses were irregular in past few months with passage of clots at every other period. She had 3 children ages 19, 16 and 12, and her last known pregnancy terminated in a 3 months spontaneous abortion 6 years ago. There was no suspicion of pregnancy at this admission. There was profuse bleeding on admission with clots which began 4 days previously. She was given ergotrate with no response.

Abdomen revealed a firm hard nodular uterus freely movable above the symphysis. No pelvic examination was done because of the danger of infection. Bleeding was severe and patient was in impending shock. She was treated by intrauterine packing to control hemorrhage. A consultant diagnosed a bleeding uterine tumor and hysterectomy was advised as soon as patient's condition permitted. She was given transfusions, Vitamin K and antibiotics prophylactically. A supracervical hysterectomy was performed on 8-13-49. Pathologic report as follows:

"Specimen comprises a uterus removed by supracervical hysterectomy. It presents a large dark greyish-brown polyp structure which is pear shaped. This measures 4½ cm. by 3 cm. in width at region of base. Myometrium is 2 cm. in width and is fibrous in appearance. Endometrium thin and pinkish gray in color. Cut surface of the polyp is reddish gray in color and somewhat fibromuscular in appearance. Near the tip it is deep red in color and hemorrhagic in appearance.

Sections through the uterine wall present a characteristic picture of irregular shaped columns of trophoblastic cells invading the fibromuscular stroma of the uterus. Mitotic figures and large hyperchromatic cells with heavily stained nuclei are noted. Hemorrhage and coagulation necrosis of the tissue is also found. Degenerating chorionic villi are also noted in

some of the sections. Pathological Diagnosis—Chorionepithelioma."

An X-Ray of the chest on 8-20-49, 1 week post-operative, was negative and the patient was discharged as improved on that day. A note by the attending surgeon indicated the patient would be followed with A.Z. tests.

On September 30, 1949, 6 weeks post-operative, she reentered the hospital for a surgical conization of the cervix. An A. Z. test at this time was negative.

This patient has been seen and followed by her original attending surgeon and he reports that she is in excellent health maintaining adequate weight and is employed as a saleswoman.

She had no post-operative X-Ray therapy and there were no other biologic pregnancy tests taken other than the single test reported above.

Although it is probably still too early to prognosticate the eventual outcome of this patient, it is indeed surprising that a simple supracervical hysterectomy with conization of the cervix has effected a 3 year cure. The omission of radiation therapy and the preservation of the adnexae and the shell of cervix would seem to be the only deterrent to a more enthusiastic outlook.

The significance of the pregnancy 6 years preceding the development or detection of this chorionepithelioma or its origin from a more recent pregnancy will probably remain unsolved. The absence of any definite decidua or decidual reaction in the specimen as reported would seem to lend more importance to the antecedent pregnancy 6 years ago. This would then represent a fairly long interval between pregnancy and chorionepithelioma in the series. The preceding pregnancy, terminating in a 3 months spontaneous abortion, had not been followed by a currettage, and the significance of the ommission of this procedure with respect to subsequent chorionepithelioma is, of course, speculative.

SUMMARY AND CONCLUSIONS

1. The occurrence of signs and symptoms of spontaneous abortion during the fourth and fifth month of pregnancy should lead one to suspect the possibility of hydatid mole, as it appears that the average spontaneous abortion of mole occurs at a later date in pregnancy than that of the average non-molar abortion.

2. One should not fail to consider hydatid mole simply because the uterus is not larger than the corresponding period of amenorrhea would indicate, as in 63% of the cases in this series, the uterus was smaller or of corresponding size. Due to possible molar degeneration, the longer the duration of pregnancy, the smaller does the uterus appear to be in size for the corresponding period of amenorrhea, just as one would expect to see in a missed abortion.

3. The frequency of repeated hospital admissions and persistent bleeding before a definite diagnosis is made attests to the difficulties encountered in this regard. It seems paradoxical that such intensive efforts in the use of expensive biologicals, sedatives, use of hospital beds and loss of time from gainful occupation etc., should be made in order to salvage a possible abnormal pregnancy or a molar pregnancy with malignant potentialities.

4. The occurrence of toxemic manifestations during the early months of pregnancy might serve as an indicator that an abnormal pregnancy or mole exists.

5. Dilatation and curettage immediately following expulsion or removal of a mole leads to a more satisfactory recovery with a lower incidence of recurrent vaginal bleeding.

6. It seems that more cases of spontaneous abortion, especially where a definite fetus and secundines have not been identified, should be followed by thorough curettage, for in so doing, cases of hydatid mole, not clinically evidet, could be uncovered and the patients treated and followed accordingly.

7. Persistent bleeding following molar expulsion or evacuation calls for extreme caution and diligent search for the possibility of chorionepithelioma. Greater reliance should be placed on the biological pregnancy tests, especially as to gradually increasing titer, with correlation of history and clinical findings.

8. Lutein cysts are benign tumors and should be retained whenever possible, except perhaps when performing total hysterectomy for chorionepithelioma.

9. Abdominal hysterotomy appears to be the best approach in the patient with mole at age 35 or beyond. This should be accompanied by hysterectomy depending on associated factors.

10. A biologic pregnancy test is extremely important as a follow-up of mole and should be repeated at monthly intervals for at least one year after the first negative test. A positive test within 3 months following molar evacuation is not significant unless the titer is extremely high and appears to be rising as determined

by repeated testing. A "persistent positive" biologic pregnancy test is misleading, unless accompanied by clinical symptoms and increasing titer, and should not be considered indicative of chorionepithelioma.

11. There seems to be a definite lack of reliance on the value of the biologic pregnancy test, both in attempts to establish the diagnosis in suspected cases of mole as well as in the follow-up, and it appears that a greater utilization of this test would reveal the diagnosis at an earlier date and thus forestall unnecessary and futile attemps to control pre-abortal bleeding, as well as to uncover hidden post-molar chorionepithelioma before bleeding takes place or in cases where the lesion might be missed by the curette.

12. A course of deep X-Ray therapy seems advisable following extirpative surgery for chorionepithelioma and biologic tests at monthly intervals would appear to be in the best interest of the patient.

REFERENCES

1. Mathieu, A.: Hydatiform Mole & Chorionepithelioma—Int. Abstracts of Surgery 68: Part 1, 52-70; Part II 181-198. In S.G. & O. Jan. & Feb. 1939.
2. Hertig, A. T. & Edmonds, H. W.: Genesis of Hydatid Mole--Arch Path 30.: 260. July 1940.
3. Graffagnino, P. & Jeffreys, E. M.: West. Journal of Surgery, 52: 29-30. Jan. 1944.
4. Sherman, J. T. — Hydatid Mole — A Study of 78 Patients—American Journal of Surgery: 27: Pages 237-244. Feb. ruary, 1935.
5. Brews, Alan J. — Journal of Obstetrics and Gynaecology British Empire 46: 813. 1939.
6. Chesley, L. C., Cosgrove, S.A., & Preece, J.—Amer. Journal Obstetrics & Gynecology 52: 311-320. August 1946.

PHYSICAL MEDICINE AND REHABILITATION

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PHYSICAL Medicine and Rehabilitation is the newest recognized field of specialization in medicine. The purpose of this paper is to describe the background of this specialty, and to familiarize the physician with the purpose and necessity of this new field.

Although physical agents in the form of heliotherapy, massage, and hydrotherapy have been used practically since the dawn of mankind, many centuries passed before physicians became sufficiently interested in the use of physical agents in the treatment of disease. At the turn of the last century and throughout the period of the First and Second World Wars, an increasing interest developed in the use of physical agents and physical therapy for the rehabilitation of the handicapped. During this time a number of physicians gravitated to Physical Medicine and Rehabilitation to the extent of confining their practices totally to this specialty. To these men we owe a debt of gratitude for their assistance and organization of the American Board of Physical Medicine and Rehabilitation.

Although in 1936 it was first proposed that a board of Physical Medicine should be established, it was not until January, 1947 that an organization plan was submitted, and approved by the Advisory Board of Medical Specialties. At the onset, the American Board of Physical Medicine was an affiliate board functioning under the direction of the Committee on Standards and Examinations of the Advisory Board for Medical Specialties. Two years later it became an independent board with full representation in the Advisory Board for Medical Specialties. In September of 1947 the American Board of Physical Medicine held its first examinations. In June of 1949 the American Board of Physical Medicine became the American Board of Physical Medicine and Rehabilitation upon the approval of the Advisory Board for Medical Specialties.

The purposes of the Board are:

1. "To elevate the standard of Physical Medicine and Rehabilitation, to familiarize the public with its aims, and ideals, to protect the public against irresponsible and unqualified practitioners, to receive applications for examinations in Physical Medicine and Rehabilitation, and to perform such duties as will advance the specialty of Physical Medicine and Rehabilitation.
2. To determine the competence of specialists in Physical Medicine and Rehabilitation and to arrange, control and conduct investigations and examinations, to test qualifications of voluntary candidates for certificates to be issued by the corporation as set forth by the constitution and by-laws.
3. To serve the public, physicians, hospitals, and medical schools, by preparing and furnishing lists of practitioners who shall have been certified by the corporation."

To aid in accomplishing these aims, three year residency training programs were organized at well-established medical centers throughout the

United States. These residencies were designed to give the physician a well-grounded knowledge in the basic sciences as related to Physical Medicine and Rehabilitation. These include anatomy, physics, physiology, and pathology as related to this specialty. In addition to this, of course, the training in Physical Medicine and Rehabilitation includes the clinical aspects of Physical Medicine and Rehabilitation. The diseases and conditions that come within this specialty are the arthritides, various rheumatic diseases, neuro-musculo-skeletal diseases, and a large group of traumatic and orthopedic conditions. Training in the clinical use of such physical agents as heat, ultrasonics, water, electricity, ultra-violet radiation, massage, and exercise in relation to the fore-mentioned diseases is an integral part of the residency training program. Training in the use of and co-ordination of services of such personnel as the physical therepist, occupational therapist, clinical psychologist, social service worker, vocational guidance worker, etc., as well as training in prescribing in detail, the specific therapy required for the individual case is a necessary part of the residency program.

After the individual has completed the three year residency training program as outlined above at an accepted medical center, he or she is then qualified to take the first part of the Board examinations. The individual then, must have two years of practice in Physical Medicine and Rehabilitation before he is eligible for the second and final portion of the examination. If the individual successfully completes both part one and two of the examination, he is then certified by this Board.

Sociologically and economically the need for Physical Medicine and Rehabilitation services for the physically handicapped seems obvious. Although at times the rehabilitation program for an individual appears to be costly, the successful rehabilitation of such individuals in the long run is economically much less expensive and relieves society of prolonged sociologic and economic problems.

A brief review of the statistics regarding the increased number of physical disabilities will further emphasize the need and necessity for Physical Medicine and Rehabilitation. In the United States, a survey made in 1940 of adults with orthopedic impairments revealed 2,603,000 such cases to exist. The annual increment of such cases has been estimated to be in the neighborhood of 94,440 cases a year. The number of amputees in the United States has been estimated to be 900,000. Of these 400,000 have major amputations, and the annual increment for individuals having major amputations is an estimated 40,000. In addition to this, hundreds of thousands of individuals are added to the roles of the physically disabled by cerebral palsy, poliomyelitis, epilepsy, diseases of the heart and arteries, diabetes, tuberculosis, and a wide variety of traumatic conditions of the nerve, muscle, and bone. It must be remembered in the statistics that have been quoted that the acoustically handicapped, the visually handicapped, and those with speech disorders have not been included. It is obvious from these facts and figures that the need for this medical service is becoming greater and greater with each passing year.

Presently there are four monthly publications available for physicians interested in this field; the Archives of Physical Medicine and Rehabilitation is the official journal of the American Congress of Physical Medicine and Rehabilitation, in addition to this there is the British Journal of Physical Medicine and Industrial Hygiene, The American Journal of Physical Medicine and Rehabilitation, and the Physical Therapy Review. In the past ten years a considerable amount of research in this specialty has been published. In addition to this, numerous medical books on this subject are being published yearly. A yearbook of Physical Medicine and Rehabilitation has been published for several years and the AMA periodically publishes a text on Physical Medicine and Rehabilitation.

SUMMARY: The purpose of this paper is to describe the background of Physical Medicine and Rehabilitation and to familiarize the reader with the purpose and necessity of this new specialty. A brief history of Physical Medicine and Rehabilitation is outlined and some details in regard to the establishment, purposes and aims of the American Board of Physical Medicine and Rehabilitation are given. The statistics regarding the number of cases of physically handicapped individuals are presented to stress the importance and need of this new specialty.

PHYSICAL MEDICINE MANAGEMENT OF THE TUBERCULOSIS THORACIC SURGERY PATIENT*

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IN THE past several years tremendous strides have been made for the treatment of the ravaging disease, pulmonary tuberculosis. Therefore, keeping pace with this successful advancement it has become the problem of the physiatrist to assist the post-operative tuberculous chest patient in his total rehabilitation.(1) The Physical Medicine Service at this Hospital has become an integral part in the treatment of all tuberculosis patients requiring thoracic surgery. Approximately 8 years ago, a physical treatment program was outlined by the joint Medical, Surgical and Physical Medicine Services.(2) This program has continued with modifications and improvements. Since January, 1947 more than 678 tuberculosis patients received major surgical procedures at Fitzsimons Army Hospital, Denver, Colorado.(3) Over 95% of these patients received Physical Medicine treatment and rehabilitation.

We are aware of the fact that we are dealing with patients with pulmonary tuberculosis and that bed rest is still the accepted management. Therefore all physical treatment is carefully supervised by the physiatrist. At no time are violent exercises instigated which could possibly influence the course of the primary disease. For those patients who undergo thoracic surgery, it is our obligation to aid in the total treatment of the patient by preventing and correcting any postural deviations, muscular imbalance and joint disability. It should be kept in mind that there are potential psychological problems present if the post-surgical patient suffers any permanent physical limitations or postural deformities.

The physical medicine management of patients undergoing thoracic surgery may be divided into two primary surgical procedures:

(1) Extrapleural thoracoplasty and

(2) Extirpation measures, including pneumonectomy, lobectomy, wedge and segmental resections.

The resulting tendency for body deformities and mechanical limitations are different; however, it is obvious that the most potential deviations can occur following thoracoplasty. In order to prescribe and direct the management of these patients the physician should be thoroughly acquainted with the surgical procedure, the physiological changes and the altered functional anatomy which occur after the specific thoracic surgical procedure. It is only through careful analysis and understanding of the pathological dynamics that correct preventive and therapeutic measures can be instigated. The following are the precipitating factors leading to anatomic and functional changes as a result of thoracoplasty. (Naturally the more ribs resected the more severe may be the physical residuals).

I. Deviation of the Head and Neck

The patient's head and neck tend to deviate toward the unoperative side following surgery. This becomes a problem immediately after surgery, due to the fact that the scaleni muscles are detached from their insertion on the 1st and 2nd ribs. The normal action of the scaleni muscles is to laterally flex the neck and head. With the temporary functional loss of the affected scaleni the stronger uninvolved scaleni and their synergists exert increased force upon the cervical spine resulting in the deviation of the head and neck to the side opposite surgery. If this condition should persist there will be positional contracture or adaptive shortening of the uninvolved scaleni muscles, thereby making it more difficult to obtain a normal neck alignment. The prevention of the above deformity is two-fold: the patient is instructed to assume an over-corrected position shortly before and after surgery, with the head and neck shifted to the side of surgery. This will prevent the stronger scaleni on the side opposite surgery from increased tone and spasm, and also protect the wounded scaleni and synergists on the side of the surgery until these muscles have attached themselves to surrounding structures.

* Read at The Sixth Annual Symposium on Pulmonary Diseases, 21-25 September, 1953, Fitzsimons Army Hospital, Denver, Colo.

At that time reeducation of the affected scaleni and synergists is initiated progressing to moderate resistive exercises until maximal strength has returned, and cervical neck alignment is normal.

II. **Elevation of Shoulder Girdle.**

The second mechanical deviation following thoracoplasty is the pronounced elevation and forward rotation of the shoulder on the side of surgery. The precipitating factor again is the surgical alteration in the normal muscle balance of the shoulder girdle. The lower trapezius is incised in surgery. The normal action of this muscle is to act as a depressor of the scapula. Due to its temporary weakened condition the upper trapezius muscle, which is not incised in the surgical procedure, assumes increased tone and therefore tends to elevate the shoulder. The pectoral muscles have a tendency to pull the shoulder anteriorly, due to the temporary weakening of its antagonistic muscles. The patient develops a habit pattern of hiking the shoulder and splinting it as an unconscious means of protecting the shoulder from motion and pain. The prevention of the above deformity should be one of helping the patient to relax the upper trapezius muscle and shoulder girdle and of careful reeducation of the depressors, adductors and rotators of the scapula until the patient has return of coordinated muscle action.

III. Scoliosis

Scoliosis in general may be caused by many conditions; however, the primary factors are alterations in stress and strain applied to the vertebral column. The direct cause of scoliosis in throacoplasty is a mechanical imbalance of the spine due to the removal of the several ribs, which were an important factor in offering skeletal support to the spine, and the ipsilateral muscle trauma and weakness of the spinal and scapular muscles resulting from surgery(4).

The following muscles are either partially or completely incised, or lose their point of origin or insertion:

(1) rhomboids
(2) serratus anterior
(3) middle and lower trapezius
(4) scaleni muscles
(5) latissimus dorsi
(6) intercostals
(7) the erectae spinae group

Due to the loss of the delicate interplay of balanced musculature on each side of the spine, combined with the loss of rib support, there is a definite tendency for early development of a low cervical upper dorsal scoliosis with the convexity to the side of surgery The rotation of the vertebrae causes the remainder of the thoracic cage to bulge laterally and posteriorly. The more ribs removed, the greater the spinal imbalance created. Compensatory changes are often evident lower in the spinal column, characterized by a laterally prominent and anteriorly rotated pelvis on the contralateral side of surgery. Although the rib skeletal support has been partially sacrificed, the muscle imbalance can be restored which would then minimize the postural spinal deviation. Prior to surgery, the physiatrist and the physical therapist indicate to the patient the postural deviations which may take place. Therefore, the patient assumes the normal postural pattern after surgery until the weakened scapular and spinal muscles have been re-educated to resume functional stability of the spine and the scapula. The mobility of the spine is maintained in an effort to prevent any permanent contracture of the unoperated muscles which have a tendency to contract and stretch the temporarily weakened muscles on the side of surgery. As soon as the traumatized muscles on the side of surgery have healed sufficiently, a careful reeducation program is begun to strengthen and coordinate these muscles back to their normal functional use.

IV. **Shoulder Disability**

Post-thoracoplasty patients have a tendency to develop shoulder limitations. This is due to:

(1) the surgical trauma of the shoulder musculature,
(2) the maintenance of drainage tubes in the chest,
(3) positioning of the patient during surgery,
(4) reflex shoulder joint pain,
(5) occasional trauma to the brachial plexus.

If the patient's gleno-humeral joint motion is not maintained immediately after surgery, a frozen shoulder may develop. Therefore passive and active assistive exercises to the shoulder joint are begun the day following surgery. Normal shoulder action depends upon the coordinated function of the scapular muscles. Therefore, careful analysis of the entire scapula-humeral mechanism is imperative if the patient is to regain complete functional control of the shoulder joint.

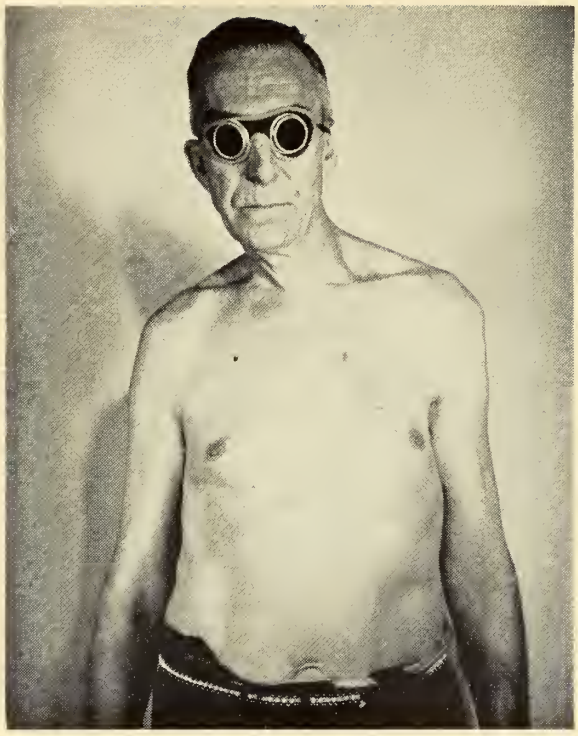


FIGURE 1: Anterior view of patient with 7-rib thoracoplasty, left, who received no physical medicine treatment.

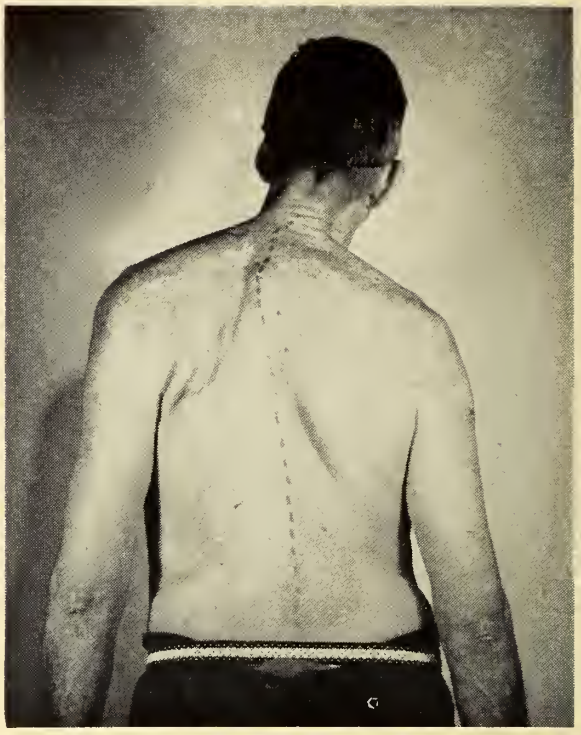


FIGURE 2: Posterior view of same patient who received no treatment.

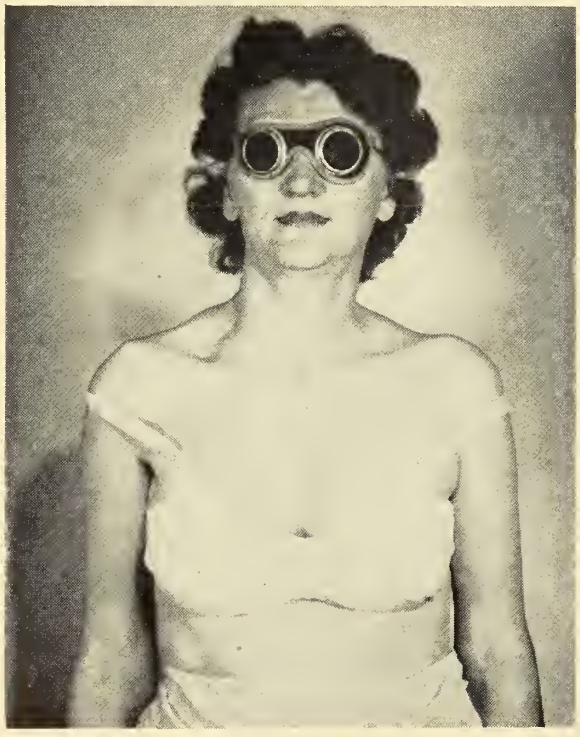


FIGURE 3: Anterior view of patient with 7-rib thoracoplasty, right, who received physical medicine treatment.

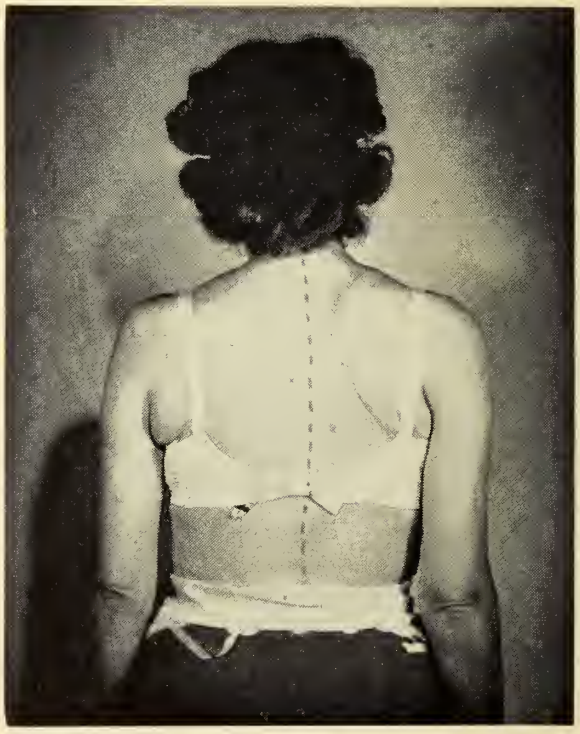


FIGURE 4: Posterior view of same patient who received treatment.

Every patient is an individual problem and a careful analysis of the altered functional anatomy is important in the reeducation and coordination of the shoulder.

EXTIRPATON SURGERY

The problem following extirpation surgery is not as great, although to the patient possible functional mechanical limitations are present.

The normal physiology and functional anatomy is not altered as much as it is in thoracoplasty. There is less trauma to the scapular and spinal musculature and, of course, the main difference is due to the fact that the ribs are not removed. In extirpation surgery where there is a decrease in vital capacity on the side of surgery with resulting inactivity of the affected chest, the patient has a tendency to develop a drooping of the shoulder on the same side as surgery and the head and neck tilt toward the side of surgery. These deviations are just opposite to that which occurs in thoracoplasty. If the patient does not receive preventive treatment he may develop a scoliotic lower cervical upper dorsal curve with the convexity toward the side opposite surgery(5). Again this is opposite to the primary curve which occurs after thoracoplasty. Shoulder mobilization is a problem as it is in thoracoplasty, again due to the sectioning of the scapular musculature, positioning of the shoulder during surgery, and pain in the shoulder joint. Treatment is carried out the same as in throacoplasty with careful reeducation and coordination of the entire shoulder girdle.

SUMMARY

There are four fundamental principles involved in the management of the pulmonary tuberculosis surgical patient. By following these principles the patient should recover from the surgical procedures with no marked muscular skeletal disabilities and should be quite capable of returning to his occupation with no regrets for having undergone surgery.

(1) All efforts should be made to protect the weak injured muscles from their stronger antagonists.

(2) Reeducation and strengthening of the weakened and traumatized muscles should be continued until their functional strength has returned to normal. This is especially important in the coordinated balanced movement of the shoulder girdle.

(3) Shoulder joint range of motion should be maintained in all planes.

(4) Develop in the patient a sense of correct posture and normal postural pattern which he can continue on his own after he is dismissed from the care of the physician.

REFERENCES

1. Harmony, W. N.: "Therapeutic Exercise for Pre and Post-operative Tuberculosis Thoracoplasty Patients," Physical Therapy Review 30:323 (Aug. 1950).
2. Gosling, R. J.: "Physical Therapy In The Management of Pulmonary Tuberculosis," Fitzsimons Army Hospital, Denver, (Sept). 1952.
3. Forsee, J .H.: "The Surgical Aspects of Pulmonary Tuberculosis," Manual on Management of Pulmonary Tuberculosis, Fitzsimons Army Hospital, Denver, (Sept.) 1952.
4. Goldberg, J., et al.: "Physical Therapy in Post-thoracoplasty," The American Review of Tuberculosis. 60-195 (Aug.) 1949.
5. V. A. Pamphlet 10-22. "Physical Therapy for Thoracic Surgery Patients," Veterans Administration, Washington, D. C. (Dec.) 1947.

PHOENIX Clinical CLUB

The Case History in this discussion is selected from the Case Records of the Massachusetts General Hospital, and reprinted from the New England Journal of Medicine. The discussant under Differential Diagnosis is a member of the staff of the Massachusetts General Hospital. The other discussants are members of the Phoenix Clinical Club.

MASSACHUSETTS GENERAL HOSPITAL

A fifty-nine-year-old man entered the hospital because of unremitting fever.

A patient, who had been well, about five weeks before admission after a bout of sneezing, developed a sharp, steady ache in the right sacroiliac region. Shortly after this he developed pain in the lower lumbar region and three or four days later in the right lower chest; the pain was aggravated by motion, but was not severe enough to limit his activity. These pains gradually subsided, disappearing entirely after about two weeks. Three weeks before entry he developed a sharp, steady, severe pain in the left precordium that was aggravated by deep breathing or coughing. In addition he began to have repeated bouts of fever, with a maximum temperature of 103°F., followed by slight chills and sweating; these bouts occurred four or five times a day and left him tired and covered with perspiration. He also had a slight dry cough, and gradually increasing anorexia and malaise. His physician treated him for eighteen days, without effect, with penicillin, aureomycin, and a sulfonamide. Four days before admission, he was seen by another physician, and again treatment with penicillin, chloromycetin and terramycin had no effect, chest pain, chills, fever, profuse sweating and a mild

cough productive of small amounts of yellow sputum continuing.

There had been marked anorexia and loss of 20 to 30 pounds in weight since the onset. For a few weeks before admission his voice had been hoarse. There had been no nausea, vomiting, diarrhea, dyspnea, orthopnea, hemoptysis, jaundice, ankle edema, skin lesions, arthritis or past history of serious illnesses. For the twenty-five years prior to entry he had worked as a car painter using lacquers and enamels. He was born in Lithuania and had come to this country at twenty-eight years of age.

Physical examination revealed a cooperative man lying flat in bed in no distress. There was slight muscular weakness of the laryngeal muscles but no other abnormality of the mouth, nose or throat. The neck veins were flat. The chest was slightly emphysematous. It showed normal respiratory excursions and was resonant throughout; there were a few moist rales at the left base. The heart sounds were normal, and no murmurs were present. There was no peripheral edema. Abdominal, neurologic and rectal examinations were negative.

The temperature was 102.4°F., the pulse 80, and the respirations 20. The blood pressure was 140 systolic, 80 diastolic.

The urine had a specific gravity of 1.017 and gave a one plus reaction for albumin; the sediment contained 0 to 1 red cells and an occasional hyaline cast per high-power field. Examination of the blood showed a hemoglobin of 11.2 gm. per 100 cc. and white cell count of 16,800, with 39 per cent neutrophils, 30 per cent lymphocytes, 18 per cent atypical lymphocytes, 7 per cent band forms, 4 per cent monocytes and 2 per cent eosinophils. The serum sodium was 130 milliequiv., the chloride 96 milliequiv., and the potassium 4.5 milliequiv., per liter; the serum calcium was 9.3 mg., the phosphorus 4.3 mg., the alkaline phosphatase 8.7 units, the fasting blood sugar 121 mg., the nonprotein nitrogen 48 mg., the total protein 10.7 gm., the albumin 1.85 gm., and the globulin 8.85 gm. per 100 cc. A bromsulfalein test showed 19 per cent retention of the dye, cephalin flocculation was one plus in twenty-four and forty-eight hours, and the prothrombin time was 16 seconds (normal, 13 seconds). Numerous blood cultures showed no growth. Agglutinins for brucella, typhoid and Proteus Ox-19 and Ox-2 were negative in all dilutions; those for Proteus Ox-K were positive in dilution 1:20, 1:40 and 1:80 and negative in dilution 1:160. A roentgenogram of the chest showed a prominent left ventricle, a tortuous aorta and prominence of the hilar pulmonary vascular shadows; the liver and spleen were of normal size. Films of the pelvis, ribs, skull and upper femurs were not remarkable. An electrocardiogram revealed a normal record. Lumbar puncture demonstrated clear spinal fluid and normal dynamics, cytology and chemistry; culture of the spinal fluid produced no growth. Aspiration smears of the bone marrow of the iliac crest, rib and sternum all showed essentially the same range of cellular distribution; myeloid cells, 52 per cent; normoblasts, 14 per cent; lymphocytes, 14 per cent; large mononuclear cells, probably monocytes, 13 per cent; and 7 per cent cells that were difficult to classify but were most probably either plasma cells or reticulum cells. The maturation in the myeloid series appeared to be normal, and megakaryocytes were present.

The patient's temperature remained between 100 and 101°F., and the physical signs remained unchanged except that marked tenderness was noted over the upper ribs anteriorly. He gradually became stuporous and developed tremors and irregular cogwheel-type movements of the hands and fingers on sustained posture; neurologic examination was not remarkable. On the sixth day the serum calcium phosphorous and phosphatase were as before, the urine gave a negative reaction for albumin (nitric acid ring test). Examination of a blood smear showed normal red cells and platelets, with 1 per cent neutrophilic myelocytes, 7 per cent band forms, 52 per cent segmented cells, 12 per cent lymphocytes, 27 per cent cells probably monocytes and 1 per cent blast forms; the hemoglobin was 10 gm. per 100 cc., and the white cell count 16,200. His course continued steadily downhill, with deepening coma and the temperature rising to 104°F., terminally. He died on the ninth day.

DR. JAMES R. MOORE:

An unremitting fever with a relative bradycardia suggests the possibility of typhoid or related fever. The negative agglutination tests and a moderate leukocytosis are probably sufficient to rule out that condition. The significance of a positive agglutination for proteus Ox-K in a dilution of 1 to 80 is not known but probably has no bearing on the real pathology here.

An elderly—I reluctantly but probaly cor-

rectly use that term—male of 59 with weakness, marked weight loss, migrating rheumatic pains in back and chest, a moderate anemia, some signs of renal insufficiency, hyperproteinemia, hyperglobulinemia, and inverted a-g ratio arouses that "high index of suspicion" said to be an essential attitude for a successful early recognition of certain conditions having varied and confusing manifestations. The above combination of clinical and laboratory findings may be found in multiple myeloma and call for a careful examination of the bone marrow. In attempting to evaluate the reported bone marrow findings I encountered, in looking up the subject, such a confusing, to me at least, nomenclature that I could not be sure if the cells described represented a significant immaturity of the cellular elements and the presence of the plasma and myeloma cells necessary to clinch a diagnosis.

The absence of at least two of the most characteristic findings of multiple myeloma in this case; namely, x-ray evidence of osteolitic lesions and presence of Bence-Jones protein in the urine, is disturbing but does not rule out the diagnosis. Bence-Jones protein may be found constantly or intermittently, but in from 35 to 40% of the cases is absent. With only two reported urine examinations in this case, its presence could have been missed. Limarzi has reported several cases of proven multiple myeloma in which there were no x-ray evidences whatever of bone lesions. It is apparent, therefore, that absence of such lesions does not rule out the diagnosis. It is possible that in the past many cases of multiple myeloma, especially in the earlier stages, would not show the so-called cardinal findings and were wrongly diagnosed on the basis of presenting symptoms as rheumatism, sciatica, fever of unknown origin, etc.

Again, there is no significant change in the calcium phosphorus metabolism in this case. In multiple myeloma the serum calcium is often high with normal or slightly elevated phosphorus, but this is more common when osteolitic lesions are prominent and none were demonstrated in our case.

The renal involvement in multiple myeloma is usually of the type found in this case; namely:
1. Albuminuria with few hyaline casts and red cells.
2. Elevated NPN.
3. Normal or low blood pressure.
4. Absence of marked edema or retinitis.

The renal insufficiency in multiple myeloma results from tubular blockage and accompanying renal cortical atrophy.

Differential diagnosis:

1. From an acute infection. This is somewhat difficult with body pains, fever, leucocytosis, chills and sweats so often found in infections. Against a primary infectious process, however, are: 1. The absence of an adequate demonstrated focus of infection. 2. Failure to respond to a number of broad spectrum antibiotics and at least one sulpha drug. 3. Increased white blood count but without polymorphonuclear increase. Fever is a very frequent occurrence in multiple myeloma and cannot always be explained on the basis of pulmonary or other existing infections. Terminal hyperpyrexia is a very frequent occurrence and resembles that found in the terminal state of other malignant conditions.

2. Pernicious anemia is differentiated by the different blood picture.

3. In this case it would not be confused with hyperparathyroidism as there are no skeletal lesions. When these are present the low phosphorus and high serum calcium in hyperparathyroidism, as contrasted with a normal phosphorus and high calcium in multiple myeloma, should serve to differentiate the two.

4. Metastatic carcinoma to bone is not a problem here as there are no x-ray evidences of bone lesions found. Metastatic carcinoma from the prostate would give an elevated acid phosphatase when from thyroid, stomach, etc., and the absence of hyperprotenemia and especially hyperglobulinemia would be significant.

5. Differentiation from other disturbances of the blood-forming mechanism on the basis of cytological findings in blood and bone marrow is beyond me and will not be attempted.

On the basis of the following combination of symptomatology, clinical and laboratory findings, and in spite of the absence of at least two very important diagnostic findings, I make the diagnosis of multiple myeloma.

1. Migratory bone pain.
2. Weakness.
3. Marked weight loss.
4. Fever.
5. Renal involvement without hypertension or edema.
6. Hyperproteinemia and hyperglobulinemia with inverted a-g ratio.
7. Abnormal blood picture.

8. Abnormal bone marrow, both consistent with a diagnosis of multiple myeloma.

Addenda:

The apparently recent onset, the absence of certain bone changes, the rapid downhill course and early death may be due to the high malignancy of the basic process and severity of the cachexia. The rapidity of the process may explain the absence of some of the bone changes and altered calcium metabolism which apparently develop on a more chronic basis.

Diagnosis: Multiple Myeloma.

DR. LESLIE R. KOBER:

We have here a 59-year-old man who, prior to his present illness, had been perfectly well. He had worked for 25 years as a car painter, using lacquers and enamels, and naturally we wonder if there had been some toxic effect from this over a long period of time. From the onset, which was 5 weeks before admission, there was a continual and progressive downhill course until death finally ended his career on the 9th hospital day. His first epsode of pain followed sneeze and occurred in the right sacroiliac region. This progressed several days later to the right lower chest area, which was aggravated by motion, and partly disappeared for a period of 2 weeks. However, there was a recurrence of a steady, severe pain in the left precordium. This again seemed to be related to the pleura, for there was increase on deep breathing or cough. At this time he started running repeated bouts of fever with a temperature up to 103° followed by slight chills and sweating. None of the modern day "wonder drugs" seemed to have any effect on his fever, and he continued with loss of weight, slight hoarseness, and fever. Apparently the fever had changed from a relapsing type to an unremitting fever. General physical examination did not give us much help, except for the temperature which was noted to be considerably higher than one would expect for the pulse rate, the latter being 80. His blood pressure being rather normal, 140/180. Clinically he continued with fever, gradually became stuporous, developed tremors and irregular cogwheel type movements, and eventually went into a deep coma and died on the 9th day with a temperature up to 104°.

From the clinical record we have unrelenting, gradually increasing symptoms, and a downhill course which seemed to start in the area of the lower dorsal spine, involve the pleura, and eventually progress to involvement of the central nervous system and base of the brain. From the history and physical findings it seems impossible to make a diagnosis other than some widespread gradually progressing process, probably granulomatous or malignant in nature, which produced death by way of involvement of the basal cerebral structures.

Let us revert to the laboratory findings. These are of two types. First, the blood examinations, both cellular and chemical, and then the bone marrow studies. Blood cultures, lumbar puncture, examination of the cerebra-spinal fluid, and x-ray examination give only negative diagnostic information. Our first diagnostic clue would seem to come from the white blood count of 16,900, with 18% atypical lymphocytes. Do we have a leukemia of the lymphocytic group? Probably not.

The blood chemistry is not significantly abnormal until we come to the protein, where we find an increased total protein of 10.7, and a decreased albumin of 1.85, and the globulin increased to 8.85 gm. per 100 cc. These finding bring forth the possibility of multiple myeloma, or sarcoidoisis. Other possibilities are carcinoma, tuberculosis, leprosy, Kala-azar, and schistosomiasis.

We also find that there was a 19% retention of dye from the liver function test using bromsulfalein, and the cephalin flocculation test was only one plus in both the 24 and 48 hour tests, which is not considered to be definitely positive. All of the agglutination tests are considered to be non-diagnostic or entirely negative. Later we find that the blood smears were showing further changes with 7% band forms, 52% segmented cells and 12% lyphocytes, but 27% cells which were called probably monocytes. Is this monocytic leukemia? Again, probably not. The hemoglobin had been reduced to 10 gms. The white count remained at the 16,200 level, and we continue to find the alkaline phosphatase somewhat elevated, the original having been reported 8.7 units. This however in the presence of liver disease is not too helpful. However, since alkaline phosphatase is usually considered an important finding let's dwell on this one test for a few minutes.

To quote from an article by Arthur Grollman (Oxford Medicine, Vol. IV, page 415).

"The enzyme phosphatase plays an important role in the deposition of bone, and the determination of its concentration in the blood plasma aids in differential diagnosis of bone diseases

when considered in conjunction with other biochemical analyses."

"The phosphatase present in normal blood serum is almost entirely of the variety active in alkaline media and is identical with that found in bone. Its concentration in blood reflects the content of the enzyme in the bones and the severity of several bone diseases may be correlated roughly with the enzyme content of the blood. An increased concentration of serum phosphatase occurs especially in such bone diseases as are attended by the formation of abnormal bone, as in Paget's disease, or of osteoid tissue, as in rickets. Mere bone destruction, however, is not associated particularly with an increase in the concentration of the enzyme.

"Obstruction of the biliary system produces a retention of phosphatase in the blood. This fact may be utilized in the differentiation of hemolytic jaundice, in which the phosphatase is unaffected, from the obstructive variety. However, it also vitiates the significance of phosphatase determinations in bone diseases in the presence of hepatic disease.

"An increased alkaline phosphatase of the blood is noted also in tuberculosis of the bone, during the last trimester of pregnancy, in Hodgkin's disease following invasion of bone, and in Boeck's sarcoid."

However, according to Bodansky and Joffe and others, the serum phosphatase is rarely if ever elevated in multiple myeloma.

From the foregoing statements, we are now faced with the question of whether or not an alkaline phosphatase which is increased to 8.7 units indicates bone disease or merely is a retention due to obstruction in the biliary system. In view of the 19% retention of bromsulfalein it seems quite likely that we have liver damage, and the alkaline phosphatase elevation is one of the results of this damage.

Previously we noted an increase in total serum protein, with low albumin and high globulin.

X-ray examination of skull, pelvis, ribs, and upper femurs was not remarkable, which again leads one to believe the increased protein did not mean multiple myeloma. The finding of plasma cells up to 7% in the bone marrow however makes one wonder if a careful study for so-called multiple myeloma cells would enable a tentative diagnosis, even in the absence of definite bone lesions.

Likewise other bone tumors such as sarcoma or endothelioma should have shown up on x-ray.

Acute myelogenous or lymphatic leukemia is ruled out by the absence of immature forms in the bone marrow studies. However, the course, with rapid (7 weeks) progression to death; persistent fever, leucytosis including band forms, monocytes, and blast forms, reduction of hemoglobin, and a bone marrow showing 13% monocytes and 7% plasma or reticulum cells must be classed as an atypical acute leukemia. There are acute blast, lympho-sarcoma cell, agnogenic, monocytic, chloroma, and plasma cell leukemias to consider.

If one is to call this leukemia, it seems to me it would fall in that group called plasma cell multiple myeloma or plasmacytoma where plasma cells appear, but where no myelomata are evident in the bones. The history of working with lacquers and enamel might favor a toxic cause and suggest agnogenic type of leukemia. Lymphosarcoma cell leukemia can only be diagnosed from study of the microscopic sections of marrow.

The terminal fever, marked tenderness over the upper ribs anteriorly, gradual stupor and deepening coma fit a diagnosis of leukemia. Hemorrhage in the base of brain as a possible end result, or even leukemic infiltration, seems likely.

Hodgkin's disease or lymphoblastoma might be considered, with the prominence of the hilar pulmonary vascular shadows on x-ray indicative of mediastinal gland enlargement, if such is the diagnosis.

Another possibility might be disseminated carcinoma of the bone marrow with metastases to the brain, or let's just say carcinoma with metastases, to be on the safe side.

I toyed for a long time on the diagnosis of sarcoidosis, and before ending I would like to elucidate this possibility further. By definition, sarcoidosis is a chronic, relapsing infection of the reticuloendothelial system, usually benign but widely distributed throughout the body, affecting particularly the lymph nodes, lung, spleen, skin, bone marrow and liver and chracterized by epithelioid cells arranged in tubercle like formations.

The disease has been known to extend into the brain and according to Roos infiltrations at the base of the brain form one of the commonest sites for cerebral lesions.

The liver also is quite a frequent seat of the disease. This is not detected in a great many

patients during life, but functional tests have shown liver damage in some cases and elevation of alkaline phosphatase is known to occur, probably due to liver involvement.

Considering the widespread dissemination of the lesions in generalized sarcoidosis, the sparcity of constitutional symptoms and bodily reactions are most striking. This is particularly surprising when one compares this disease with other forms of granuloma such as Hodgkin's disease, syphilis, and tuberculosis. Fever is likely to occur in the early stages or in the later stages especially when the lungs are extensively invaded.

Anemia is not a feature of the disease and the leucocyte count usually is within normal limits, but frequently there is an increase in monocytes and a moderate eosinophilia.

Elevation of the serum proteins is likely to take place during the progressive phases. These abnormal increases are due to elevation in the globulin fraction.

Great difficulty arises in the diagnosis of sarcoidosis when the abdominal organs are affected without swelling of the superficial lymph nodes, skin eruptions or skeletal changes.

TO SUMMARIZE:

(1) Clinical Course—indicative of unalterably progressive process to death within 8 wks., despite all modern medical science.
(2) Fever — unresponsive to anti-biotics and unexplainable on basis of infection in blood culture, spinal fluid, or lungs on x-ray.
(3) Hyperprotenemia—with reduction of albumen and increased globulin.
(4) Increased alkaline phosphatase.
(5) 19% retention of bromsulfalein.
(6) Moderate leucocytosis with at first 18% atypieal lymphocytes, and later 27% probably monocytes and 1% blast forms.
(7) Bone marrow studies revealing 13% large mononuclear cells, probably monocytes, and 7% probably plasma or reticulum cells.
(8) Terminally—marked tenderness over the upper ribs anteriorly, gradually increasing stupor and coma with tremors and cogwheel-type movements of hands and fingers on sustained posture.

The implication from most of these findings is a rapidly progressive disease such as leukemia, but also myeloma, or sarcoidosis, where infiltration of the bone marrow, probably liver, and base of the brain occur and death occurs following deepening coma.

I suppose it would be possible for this to be a primary brain tumor and we have been misled by all the fuss over blood evaminations, chemistry, and bone marrow studies.

Also hypernephroma must always be considered in obscure cases such as this. However on the evidence presented and relying heavily on the finding of plasma cells in the bone marrow I am going to stick with a diagnosis of plasma cell leukemia.

DIAGNOSIS:

1. Plasmacytoma (Plasma cell leukemia: multiple myeloma)
2. Sarcoidosis
3. Carcinoma with metastases

DIFFERENTIAL DIAGNOSIS:

Dr. William H. Baker: I wonder if I may see the x-ray films?

Dr. Joseph Hanelin: I have nothing to add to the findings in the films as noted in the protocol. The bones appear normal; the skull is not remarkable. The heart is somewhat enlarged in the region of the left ventricle, and vascular markings are slightly prominent. No obvious parenchymal lesion is evident.

Dr. Baker: Were there any films of the spine?

Dr. Hanelin: No.

Dr. Baker: What about the humeri?

Dr. Hanelin: What I see of them appears normal.

Dr. Baker: In summary, this patient had six-week course of what I intepret to have been bone pain, weight loss, anorexia, malaise, fever, anemia, marked hyperproteinemia and marked hyperglobulinemia. On the basis of this rapid fulminating course and the hyperproteinemia, I have but one recourse—to make a diagnosis of multiple myeloma.

Unremitting fever has not been noted to be a prominent characteristic of multiple myeloma but in a recent article Adams et al. showed that 52 per cent of their patients had fever. In the older German literature there have been cases of multiple myeloma of a fulminating character associated with a high degrec of fever. The type of fever, with bouts of temperature up to 103°F., associated with marked sweating, is commonly associated with Hodgkin's disease, carcinomatosis, miliary tuberculosis and other diseases that had been looked for by serologic tests in this case.

The bone pain was consistent with a lesion involving the bones diffusely. That it was first

Amebiasis[1] a "Poorly Reported" Disease

Until serious complications arise, amebiasis may pass unrecognized and patients receive only symptomatic treatment.

Although amebiasis is a disease with serious morbidity and mortality, statistics on its incidence[1] are incomplete because its manifestations are not commonly recognized and consequently not reported.

"*Vague symptoms*[2] *referable to the gastrointestinal tract, such as indigestion or indefinite abdominal pains, with or without abnormally formed stools, may result from intestinal amebiasis. Not infrequently in cases in which such symptoms are ascribed to psychoneurosis after extensive x-ray studies have been carried out, complete relief is obtained with antiamebic therapy.*"

To prevent possible development of an incapacitating or even fatal illness and to eliminate a reservoir of infection in the community, diagnosing and treating[3] even seemingly healthy "carriers" and those having mild symptoms of amebiasis is advised.

Early diagnosis[1] is important because infection can be rapidly and completely cleared, with the proper choice of drugs and due consideration for the principles of therapy. For treatment of the bowel phase these authors find Diodoquin "most satisfactory."

For chronic amebic infections, Goodwin[4] finds Diodoquin to be one of the best drugs at present available.

Diodoquin, which does not inconvenience the patient or interfere with his normal activities, may be used in the treatment of acute or latent forms of amebiasis. If extraintestinal lesions require the use of emetine, Diodoquin may be administered concurrently. It is a well tolerated and relatively nontoxic orally administered amebacide, containing 63.9 per cent of iodine.

Diodoquin (diiodohydroxyquinoline), available in 10-grain (650 mg.) tablets, reduces the course of treatment to twenty days (three tablets daily). Treatment may be repeated or prolonged without serious toxic effect. It is accepted by the Council on Pharmacy and Chemistry of the American Medical Association. G. D. Searle & Co., Research in the Service of Medicine.



Endamoeba histolytica (trophozoite).

1. Hamilton, H. E., and Zavala, D. C.: Amebiasis in Iowa: Diagnosis and Treatment, J. Iowa M. Soc. *42*:1 (Jan.) 1952.

2. Goldman, M. J.: Less Commonly Recognized Clinical Features of Amebiasis, California Med. *76*:266 (April) 1952.

3. Weingarten, M., and Herzig, W. F.: The Clinical Manifestations of Chronic Amebiasis, Rev. Gastroenterol. *20*:667 (Sept.) 1953.

4. Goodwin, L. G.: Review Article: The Chemotherapy of Tropical Disease: Part 1. Protozoal Infections, J. Pharm. & Pharmacol. *4*:153 (March) 1952.

experienced after a bout of sneezing is characteristic of destructive lesions of bone due either to a malignant lesion or to some other process. The transitory nature of the bone pain is characteristic of multiple myeloma. He experienced pain in at least two sites in the ribs. I do not know whether a friction rub was heard at the time he had the pain in the left precordium but I assume it was not.

The fact that the patient was treated by numerous antibiotics is interesting. In the past year there have been two cases of patients who received large amounts of sulfonamide and thereupon developed a plasmacytosis of the bone marrow and of the liver, and interstitial nephritis following the sulfonamide therapy. Both patients also had hyperglobulinemia. Although I do not think the sulfonamides had anything to do with this patient's course it is interesting to speculate about a possible relation.

The weight loss is consistent with a diffuse process, especially a diffuse process of neoplastic cells.

The patient was a car painter who used lacquers and enamels. It is well known that benzol (benzene) will produce lymphoma in animals but there is no clear-cut relation in the production of human tumors. Benzol was probably used in the past, but my chemist friends tell me benzol is not used in car paint now.

The patient was born in Lithuania, so the Service thought of Brill's disease or typhus occurring as a recrudescence in an immigrant to this country. That was ruled out by the negative Proteus agglutinations for OX-19 and OX-2, which should have been positive if the patient had Brill's disease.

I am at a loss to explain the hoarseness and the weakness of the laryngeal muscles. It is true that extravisceral myelomatosis most commonly involves the upper respiratory tract, and it is possible that this man had myelomatous involvement of either the vocal cord or the laryngeal muscles. Another possibility, if the diagnosis is correct is amyloid infiltration of the laryngeal muscles. In the myeloma the amyloid depositions characteristically involve rather unusual sites. Indeed Lichtenstein and Jaffe say that whenever amyloid is found in rather unusual sites, the possibility of myeloma should be seriously considered.

Regarding the negative mouth, nose and throat examination, in their recent article, Adams et al. pointed out that 98 per cent of their 61 patients had either an extremely carious condition of the teeth or complete edentia. Since all these patients are in the older age group, I am not sure it means much.

Next, I should like to comment on the laboratory data. The slight azotemia that this patient had is probably quite consistent with involvement of the kidneys. The fact that the blood pressure was not elevated is quite characteristic; myeloma kidneys produce uremia but usually no elevation in the blood pressure. The anemia is quite consistent with any neoplastic disease, with miliary tuberculosis and with any of the other conditions that may produce a hyperglobulinemia. The elevated white cell count is usually found with multiple myeloma. The differential counts on the blood I am at a loss to interpret. I assume the 18 per cent atypical lymphocytes found on admission and the 27 per cent cells called "probable monocytes" noted on the sixth hospital day were probably myeloma cells. There was no mention of rouleaus formation; it occurs in about two-thirds of the patients with myeloma and may be of some help in establishing a diagnosis. The low serum sodium I interpret as the result of the diaphoresis associated with the fever and poor nutritional state of the patient. The serum potassium and calcium were normal. The calcium is supposed to be elevated in the majority of cases of multiple myeloma, but in persuing the literature I found no evidence of correlation of the serum calcium values with the degree of hyperproteinemia. The phosphorus was normal. In the early literature an elevated alkaline phosphatase has not been alluded to, but in a recent series 48 per cent of patients with multiple myeloma had an elevated alkaline phosphatase. The reason for this is not known. The bone lesions in multiple myeloma are osteolytic, usually without evidence of bone proliferation so that the cause of the elevated alkaline phosphatase remains obscure. The total protein of 10.7 gm., with such a high globulin fraction associated with the other symptoms, means to me that the patenit had myeloma.

The bone marrow was abnormal in that there was an increase in the number of plasma cells. The normal range of plasma cells varies from author to author, but most physicians are in agreement that plasma cells should not exceed 2 per cent; certainly, the figure of 7 per cent of these cells that were interpreted as possible plasma cells is definitely abnormal. I

suppose if myeloma was the diagnosis the cells that were interpreted as monocytes were probably the so-called myeloma cells — the cells that we call proplasmacytes, but Wintrobe and other hematologist call myeloma cells. They are large cells with no nucleoli and do resemble monocytes.

Regarding the absence of proteinuria, it is generally recorded in the literature that the higher the protein in the serum, the less likely is Bence-Jones protein in the urine. We do not fully agree with that because in the patients we have studied over the past years who have not had Bence-Jones protein demonstrated by laboratory tests, we have been able to demonstrate Bence-Jones protein by using Dr. Jacobson's technic. I think the great variance of the percentage of patients with myeloma who have or have not Bence-Jones protein is correlated directly with the industry of the persons assigned to look for the Bence-Jones protein. I do not say that Bence-Jones protein occurs in all patients, but I do think it will be found in a high percentage of patients if adequately looked for. It has been postulated that Bence-Jones protein does not occur in patients with hyperproteinemia because it is a protein of a low molecular weight, between 25,000 and 30,000, and forms a complex with the abnormal proteins in the circulating blood; thus, it is unable to pass through the glomeruli. Whether or not that condition existed here, I do not know. Albumin was demonstrated originally, but later the urine was negative by the nitric acid ring test. If this test is done in a careful manner with a wine glass and filter paper it is an accurate test. The nitric acid should be poured into the wine glass; the urine is poured through the filter paper, whose tip must be touching the nitric acid, and then a good interphase is demonstrated. No good interphase is demonstrated when nitric acid and urine are poured into a glass together in the usual method.

Other conditions that could cause these symptoms with hyperglobulinemia are as follows: lymphopathia venereum, which I will not even discuss; sarciodosis, but if it had been present, I should have expected to see lesions in the chest film; cirrhosis of the liver, for which the only evidence was a slight retention of bromsulfalein; kala-azar, for which there was no evidence; and disseminated lupus erythematosus, which is a possibility. A severe anemia associated with a diffuse symptomatology could be due to disseminated lupus erythematosus. No lupus erythematosus cells were demonstrated, and none were shown in the marrow. The absence of leukopenia and the sex of this patient tend to rule out disseminated lupus erythematosus. Subacute bacterial endocarditis is another offender in causing a rise in globulin. No blood cultures were taken, and there were no cardiac murmurs and no evidence of the thromboembolic phenomena; therefore, I am unable to make that diagnosis. Tuberculosis is a distinct possibility, the usual type of tuberculosis that produces a high globulin being tuberculous lymphadenitis; in the series of 65 patients with miliary tuberculosis at the Boston City Hospital reported by Chapman and Whorton no mention is made of an elevated globulin. Miliary tuberculosis is a hard diagnosis to make clinically; the diagnosis in 75 per cent of the patients at the Boston City Hospital was missed prior to autopsy.

The terminal course is interesting in that the patient went into coma. I think in the small series of patients that we have treated with steroids, 3 went into coma terminally, and all 3 showed no evidence of cerebral damage to account for the coma. Coma in myeloma is a very interesting situation. It can be caused by three conditions either an extradural tumor or dural infiltration, hemorrhage, or no demonstrable abnormality. Dr. Raymond D. Adams says he has never seen a case in which myeloma involved the brain itself. My final diagnosis is multiple myeloma probably involving the ribs, pelvis and liver, possibly myeloma kidney and questionable amyloid disease of the larynx or plasmacell infiltration or both.

Dr. Thomas Paine: Every once in a while a patient with myeloma ends up with a fungous infection. Have you experienced that yourself?

Dr. Baker: One of the patients I have seen had lymphatic leukemia with torula present in the spinal fluid, without meningitis and in the urine and in the blood. We have had two other cases of torula in the spinal fluid associated with Hodgkin's disease.

Dr. Alfred Kranes: I was visiting on the Service when this patient was on the wards. The prominent feature on admission was lethargy or stupor of a degree not adequatcly brought out in the protocol. During the nine days on the ward he was quite stuporous; the last three or four days he was completely comatose, and that was the reason for the lumbar

puncture that many of you may have been wondering about. The history of fever and pain were of loger duration than was brought out in the record. This was essentially a problem of long standing obscure fever. It was our opinion after following the patient for a day or two that the most likely diagnosis was some form of malignant lesion, because most fevers that go on for some time and do not respond to adequate doses of antibiotics turn out to be due to a malignant process. Although there are many exceptions, that is a good rough rule. We asked Dr. Jacobson several times to identify the obscure cells, hoping he would tell us they were plasma cells, but he was never very co-operative. We also did numerous bone-marrow aspirations. We were very puzzled. When the result of the serum protein determination was reported two or three days before death, the diagnosis seemed much clearer to us, although even then a number of people were unwilling to except the diagnosis of multiple myeloma.

Dr. Bernard M. Jacobson: I want to agree with Dr. Kranes, but I was not as impressed with the diagnostic significance of the high globulin as he was. To me, in a patient with fever of unknown origin, with reticulum cells in the peripheral blood and the peculiar cells in the marrow that I could not recognize as being diagnostic of myeloma, the course and history were consistent with the diagnosis of lymphomatous involvement of the bone marrow. We know that plasmacytosis of the marrow occurs in some cases of reticulum-cell sarcoma and rarely in some chronic infections. We have never seen among our 100 cases of myeloma a phosphatase this high; the highest was 6.5 units. There are some cases of lymphoma with high serum globulin.

Dr. Baker: Were any of this group patients who received cortisone? In 2 of our 6 cases an elevated alkaline phosphatase was present during steriod therapy.

Dr. Benjamin Castleman: Does the use of steroids raise the alkaline phosphatase?

Dr. Baker: I would not say it was due to steroids. We have depressed the alkaline phosphatase in Paget's disease by the administration of cortisone.

In the cases that Adams reported 48 per cent had an elevated alkaline phosphatase.

Dr. Kranes: I do not recall a single case of multiple myeloma in which there was a high phosphatase. For a while we used that as a differential point.

CLINICAL DIAGNOSIS:
Multiple myeloma.

DR. BAKER'S DIAGNOSIS:
Multiple myeloma.

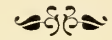
ANATOMICAL DIAGNOSIS:
Multiple myeloma.

PATHOLOGICAL DISCUSSION:

Dr. Castleman: The only positive finding at autopsy was in the bone marrow, which showed a diffuse infiltration with plasma cells. There were no localized osteolytic lesions—the more common type of myeloma—but uniform diffuse involvement—the rarer form. This type is often difficult to detect roentgenologically, since there is no contrast. On the other hand, it should be easy to detect from a bone-marrow aspiration or biopsy. There was a good deal of pulmonary edema. The kidneys did not show any of the myeloma casts, and there was no evidence of amyloid anywhere.

Dr. Kranes: The reason for his stupor was always obscure, even after we strongly suspected that the patient had myeloma. We were asked to explain why he was so stuporous and why he was twitching.

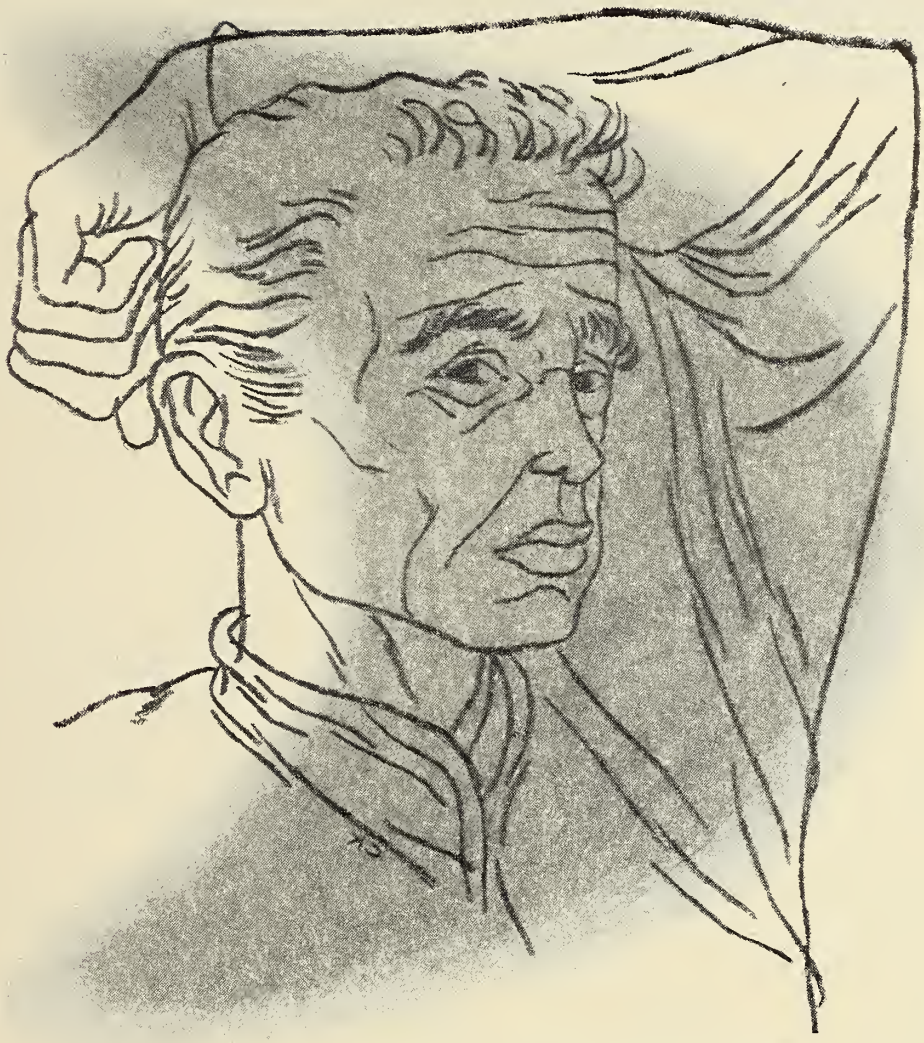
Dr. Castleman: We have not found anything grossly in the brain, and the microscopical sections of the brain are not through yet. There was no evidence of extraosseous myelomatous infiltration of the dura.



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ALL CONTRIBUTORS OF ARIZONA MEDICINE SHOULD HAVE THEIR MATERIAL IN THE JOURNAL OFFICE NOT LATER THAN THE 10th OF THE MONTH PRIOR TO PUBLICATION IN ORDER TO HAVE ARIZONA MEDICINE REACH ITS READERS ON OR BEFORE THE 10th OF THE MONTH

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Abbott

1. Gurdjian, E. S., and Webster, J. E., Amer. J. of Surgery, 63:236, 1944.

THE *President's* PAGE

THE 1954 SESSION OF THE ARIZONA MEDICAL ASSOCIATION HELD AT CHANDLER, ARIZONA VARIED FROM RECENT MEETINGS OF THE ASSOCIATION IN THAT THE LOCATION WAS A RESORT HOTEL AND THAT THE MAJOR PORTION OF THE PROGRAM WAS OF A SEMINAR OR PANEL TYPE. THE IMMEDIATE RESPONSE OF THE MEMBERS OF THE ASSOCIATION WOULD INDICATE THAT THE CHOICE OF THE SAN MARCOS HOTEL AS A MEETING PLACE MET WITH ALMOST UNIFORM APPROVAL. THE ACCOMMODATIONS WERE THOSE ANTICIPATED IN A WORLD FAMOUS HOTEL AND THE ADJACENT GOLF COURSE AND THE SWIMMING POOL CERTAINLY ADDED TO THE PLEASURE OF ITS GUESTS. IT WOULD BE TOO EARLY TO FINALLY ASSAY THE THOUGHTS OF THE MEMBERS REGARDING THE SEMINAR TYPE OF MEETING BUT WE CAN BE CERTAIN THAT THE CHAIRMAN AND MEMBERS OF THE SCIENTIFIC ASSEMBLY COMMITTEEE WILL APPRECIATE THE THOUGHTS OF ASSOCIATION MEMBERS WHEN MAKING UP THE PROGRAM FOR THE MEETING IN TUCSON IN 1955.

THE ATTENDANCE AT THE SESSION WAS 335 WHICH I BELIEVE IS THE LARGEST IN NUMBER AT ANY SESSION HELD SO FAR. IT INDICATES THE GROWING SIZE OF THE ASSOCIATION MEMBERSHIP AND IT WOULD SEEM LOGICAL THAT THE NUMBER WILL INCREASE FROM YEAR TO YEAR AS THE ACTUAL MEMBERSHIP INCREASES. THIS IS IMPORTANT FROM THE POINT OF VIEW OF HOUSING FACILITIES FOR MEMBERS AND GUESTS, THUS INFLUENCING IN THE FUTURE THE LOCATION OF THE MEETING AND THE TIME AS WELL. I BELIEVE A BREAKDOWN OF THE REGISTRATION IS ILLUMINATING AND CHALLENGING.

County Medical Society	*Percentage of Members Registered*
APACHE	67%
COCHISE	18%
COCONINO	27%
GILA	39%
GRAHAM	50%
GREENLEE	20%
MARICOPA	39%
MOHAVE	50%
NAVAJO	33%
PIMA	20%
PINAL	52%
SANTA CRUZ	37%
YAVAPAI	26%
YUMA	23%

THE QUESTION ARISES AS TO WHETHER WE CAN EXPECT A LARGER PERCENTAGE OF MEMBERS TO ATTEND THE ANNUAL SESSIONS IN THE FUTURE. DID MEMBERS REMAIN ABSENT BY CHOICE OR NECESSITY? IF BY CHOICE IT IS OBVIOUS THAT THE ASSOCIATION MUST MAKE THE SESSION MORE ATTRACTIVE. IT IS YOUR ASSOCIATION, AND YOUR SUGGESTION MAY BE THE ONE TO MAKE IT SO.

OSCAR W. THOENY, M.D.
PRESIDENT, ARIZONA MEDICAL
ASSOCIATION, INC.

Editorial

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The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.
2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. (See MEDICAL WRITING by Morris Fishbein.)
3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.
4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.
5. Submit manuscript typewritten and double-spaced.
6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.

The Editor is always ready, willing, and happy to help in any way possible.

DITCH THAT DIATHERMY, DOCTOR!

WE MEAN just that, if you, dear reader, are the owner of an illegal and dangerous diathermy machine. It almost surely is illegal if made before 1947, since it was in that year that the Federal Communications Commission first assigned definite frequencies for diathermy operation. Owners were given until June 30, 1953 to dispose of these old machines or to have them changed over. Not all of them did and it is estimated that about 35% of all diathermy machines now in operation are illegal. Their continued use renders their user liable for up to $10,000 fine and two years imprisonment.

"Dangerous" too, did we say? We certainly did. These pain soothing devices through their far-reaching radio interference can foul up a lot of important things. For instance one could:

1. Throw a radio-controlled guided missile off its course. Or even attract one to itself and bring you a NIKE, for example, with all its destructive force.
2. Provide a radio beam to guide an enemy plane to your office as a target.
3. Foul up instrument landings at the airport causing an airliner crash.
4. Interfere with police, and other emergency short-wave calls for miles around.

There's more but this should give you an idea. It's fact, not fiction. Distances covered by such interference are staggering. Signals from an illegal machine in Florida were picked up in the state of Washington!

Yes, we've "ditched" ours, Doctor. How about you? Do it today.

Your diathermy dealer can advise you as to what is legal and safe.

LETTER TO THE EDITOR

Dr. R. Lee Foster, Editor
Arizona Medicine Journal
Phoenix, Arizona

Dear Dr. Foster:

On a trip to Europe in the latter part of June and early part of July 1953, I made some investigations concerning the results of, and reactions to socialized medicine in Europe, primarily in England. The following is a brief resume of my impressions of what I saw and was told.

On arriving in England with my business men associates we were met by business men engaged in the building and loan business there. Medicine in England came up, and these business men, almost one hundred per cent, were very dissatisfied with the socialized medicine program as administered by the British Government. I think these men would be classified in our country as upper middle class. Certainly they would not fall into the lower income group and would not fall into the peerage group. The chief dissatisfaction that I en-

countered with the business men in England concerning socialized medicine was their inability to make an appointment at their convenience, go see their doctor, and be properly taken care of. They felt that the general practitioner was too busy making house calls and taking care of the large number of patients on his panel to give proper time and consideration to any one patient. In addition to which, the custom there is for the patients to come to the doctor's clinic or office in the morning, and stand in line and wait their turns for medical treatment. This of course cuts drastically into the time of a busy man and meets with little approval. These people were busily engaged, at least from the conversation standpoint, in trying to find a family doctor for their families. Apparently there is a real scarcity of family doctors in England, because practically all of the medical men do work on the British panel system. In brief, then, from the businessman's standpoint in England, at least the ones with whom I came in contact, socialized medicine is a good thing for the underpaid and lower class of people, but is not the answer to the medical problem of the middle class or upper class of people.

While in London, I interviewed the Secretary of the British Medical Society and asked him his reaction to socialized medicine. He replied that he felt that socialized medicine had undoubtedly provided adequate medical care for a great many people who had had no medical care or practically none previously. He said he believed that the medical care was as good as before socialized medicine, but that the doctor did not have time to put all the "gingerbread" in with his practice that had previously been done. He also said that of course as anywhere else and in all walks of life there were doctors that did not practice good medicine, regardless of whether it was under a socialized setup or under a private practice setup, but he believed the percentage is about the same under the present program as if it were under private enterprise. I was also told, which was a surprise to me, that England has been under some type of socialized medicine program since 1911, either a compulsory insurance program or other methods of socialization. This to me implies that the people coming out of medical school since 1911 know nothing other than socialized medicine of one form or another. The men that were in practice at that time and did not fall in with the socialized medicine program are all practically dying or retiring at this time and that is probably the reason the business man is having so much trouble finding a private practitioner for his own ills.

There is no doubt that the socialized medicine program in England has caused a lot of people to go to the doctor with minor injuries who would not have gone had they had to pay for their medical care. It is my understanding that in an attempt to at least in part correct this situation the government imposed a charge of one shilling, about fourteen cents, for each prescription that had to be filled, hoping that this would cut down on the unnecessary office visits. Apparently this has not helped, but it has taken part of the financial load off of the government. It is my understanding while in London that approximately seven per cent of the British national income is used in the public health program. Under the present setup the socialized medicine program includes the supplying of dentures, other dental work, and glasses, etc. And I am told there is a great deal of delay in procuring glasses or artificial dentures, especially if they should happen to have to be replaced.

There is another situation in this program that I do not believe the people in our country would approve of, namely the doctors that take care of the patients as general practitioners and care for them in their office or in the patient's home have no method of followup if the patient is ill enough to go to the hospital. Should such be the case, the patient is transferred to the care of a specialist who takes care of the situation while the patient is in the hospital and the family doctor has no knowledge of what has been done while the patient was in the hospital unless he receives it from some specialist, and this he may or may not do. In addition to this, he is unable to follow the progress of his patient while the patient is in the hospital. There is an attempt being made at this time to re-arrange the setup so that the family doctor can go into the hospital along with his patient and observe what the specialist is doing.

The patient load for the well established is quite heavy. Up until this year they were allowed to have 4000 patients on a panel. This year the load has been cut down to where they can only have 3500 patients on their panel.

Of course it is hard to say how many daily visits that would mean they had to make, but in this country we feel that one doctor is hardly able to look after that many patients. The doctor's wage depends upon how many people are on his panel, therefore they are all interested in getting as many names on the panel as possible. With a full panel the income would amount to about $7500 in our money and there is a way, in which, if they feel the practitioner has been very active and delivered good service, that a bonus can be given at the end of the year. This bonus can amount to as much as $2500., which would mean that a busy man giving good service might make in general practice $10,000. as a year's salary. It is also possible for the satisfactory specialist to receive a bonus at the end of the year of about an equal amount, but I believe their pay is a little bit higher than that of the general practitioner. The well-qualified surgical specialist, including his bonus, may make in the vicinity of $14,000 to $15,000. yearly. Recently the British Government has increased the general practitioner's allowance per patient as the medical profession felt that they were being underpaid. That has enabled the general practitioner to realize a little more from his educational investment. However the specialists are now unhappy because they feel that the general practitioner is being overpaid in relation to the salaries that they are receiving.

I visited the Westminister Hospital while in London and thought that it was a large and well equipped hospital. It was impossible for me to see any surgery in progress or to make adequate ward rounds as I happened to get to the hospital on Friday and most of the staff had gone on a weekend holiday. It seems that weekend holidays are quite the fad in England.

While in Germany I was not in any large city, however, I did find that the medical situation is quite similar in Germany to that in England inasmuch as the panel system is used and the younger doctors are clinging to the hospital for most of their work so that they will be able to eke out an existence while trying to get themselves established. I went through the hospital at Ludwigsburg and while the equipment was old and a bit outmoded it was serviceable and they were doing a good job. The staff in Ludwigsburg were apologetic about the state of repair of their buildings and the antiquity of their equipment, but I think they were carrying on in admirable fashion. While in Paris I visited the Foch Hospital. It is a new hospital, in fact it is not quite completed. It is very well equipped in all respects and is a nice hospital. It also has a nice location. The American doctor that visited the hospital with me, and myself, were amazed when we saw all of the facilities for outpatient care with hardly any outpatients being cared for, and the wards were not full of inpatients. I found out a few days later that the reason for this situation was that the hospital had been built in a rather underprivileged section of Paris, that the patients and people in this locality were unable to pay the costs of the hospital, that the hospital was built primarily for pay patients instead of the usual government cared for patient. I was informed that had I gone to a hospital of older vintage and in a different burrough of Paris I would have found the hospital crowded with outpatients just like we find them in our country.

In conclusion:

A. I might say that as far as I was able to determine on a short and hurried visit to the British Isles and parts of Europe, I believe that the medical care in those countries is all quite similar, especially for the middle and lower class of people.

B. I believe the better or higher class of people are more able to receive private attention in Germany and France than in England.

C. It does not seem that the medical care in these countries is on an equal basis with ours, nor is the doctor's income on an equal basis with ours.

D. The concensus seemed to be that we in the United States use entirely too many expensive medicines, anti-biotics of one kind or another without there being an actual need for such expensive treatment, the general idea being that probably the patient in many cases would recover without the use of such expensive medication, even though it might take a little longer.

E. I do not believe from what I saw that either the American public or the medical profession of the United States would be satisfied with the socialized medicine program as I saw it in operation.

Floyd B. Bralliar, B.S., M.D., F.A.C.S.

TOPICS OF *Current Medical* INTEREST

RX., DX., AND DRS.

By Guillermo Osler, M. D.

THE Pfizer 'Spectrum' in the front advertising section of the J.A.M.A. is still going strong, apparently has a great many readers. . . . A recent issue describes the brand-new (and expensive) "DAYLIGHT FLUOROSCOPY". The machine is a Westinghouse product, and they use electronic methods to step up the low light energy of the 'old' equipment. The image is 200 times as bright and one can view it in a dimly lighted room on the viewing-mirror to which it passed from the screen (thru a special tube, amplifier, output phosphor, mirrors, lens, and window). . . . It is quite safe, allows visualization of small details, pulsations, and a televising of the image.

The FUNGUS DISEASE, both pulmonary and disseminated, are under attack by various new drugs. It is logical to expect that, in this day of other successful chemotherapy, that someone should 'hit'. . . . BLASTOMYCOSIS is said to be responding, in early reports, to the stilbamidine series. . . . COCCIDIOIDOMYCOSIS ('desert' or 'Valley' fever) has another 'cure' this week, tho with less assurance.

This column has thrown the full weight (repeat, full weight!) of its publicity at the high cost of CORTISONE OINTMENTS. . . . Now comes word from Upjohn that 'Cortef' has been reduced up to 22%. . . . Have you ever speculated on how much effect the elephant's tail has on what the elephant does? Ah well, the tail goes wherever the beastie goes.

ARIZONA MEDICINE has repeatedly discussed AIR-COOLING and conditioning. Everyone from us to the Stock Market has been saying "This Is The Year". . . . It won't be the only year, but it is a good start. Refrigeration cooling has moved ahead to supplement the evaporative type. . . . The changes include smaller units, lower cost, emphasis on room-coolers, combination with heating, plenty of advertising, wide variety of trade names, etc. . . . One recent issue of 'Institutions' has an article which illustrates Chrysler Airtemp, Emerson-Electric, Frigidaire, Kelvinator, RCA, York, Philco, Cory's Fresh 'nd-Aire, International Harvester, Carrier, Fedders-Quigan, and Typhoon.

The PECULIAR THEORIES and practice of Dr. John Gregory of Pasadena, mentioned in this column before now, have come under official scrutiny. He is known for having reported data to support a 'virus' etiology of cancer. . . . The cancer committee of the California State Medical Society has found his methods secretive and peculiar, his evidence too scanty and unconfirmed, and the use of 'Gregomycin' not justified. . . . 'Gregomycin' is supposed to be an antibiotic which controls the 'virus', but they say it isn't the one, and doesn't the other. . . . The next step is up to the judicial committee of the Los Angeles County Medical Society.

'Hospital Topics' describes another service of the Cal. Medical Ass'n. It has a non-profit subsidiary, called "Audio-Digest Foundation", which produces up-to-date medical education on tape, as well as lectures and panel discussions which can be used for staff meetings or symposia. . . . Dr. Edward Rosenow (whose father is also famous in a streptococcal way) is Editor-in-Chief, and the Foundation headquarters are in Glendale. . . . Quite a thrill to hear famous medical speakers give their own special lectures. We have a friend who has a machine in his car, on which he plays his tapes, and to which he dictates. No effect on his driving efficiency, it is said.

The Archives of Surgery tells of the next best thing to a flight to Honolulu, but it seems hard to believe. . . . Eiseman of Denver has found that fresh, unripe cocoanuts yield a sterile, nonhemolytic, apparently nonantigenic fluid which CAN BE USED INTRAVENOUSLY. A 'transfusion' of COCOANUT JUICE! . . . He has used it in rabbits, dogs, and 21 humans without difficulty, tho, theoretical hazards would include reaction to small amounts of protein and a possible hyperkalism from the relatively high potassium concentration.

Few substances in medical use have the recurrent bounce of TUBERCULIN. . . . It was first used for therapy, and its failure killed-off a disillusioned Koch. . . . It was then used to diagnose disease by subcutaneous injection, and was dropped abruptly in 1929. . . . It was widely used for case-finding, and was edged out of the picture by photofluorography. . . . it was praised again for use in certain groups, in certain areas of the country, but hasn't had wide usage. . . . NOW it is again proposed as a diagnostic method of first infection in persons who are in contact with tuberculosis. The object is to find the new infection quickly, whether accompanied by a lesion visible by chest x-ray or not, in order to start the person on CHEMOTHERAPY at once. . . . The use of

HBA FOR SECURITY

THE HOSPITAL BENEFIT Bulletin

Special Published Bi-Monthly by the Hospital Benefit Association, First Street at Willetta, Phoenix June, 1954

HBA PAYS MORE THAN YOU THINK

Not to be compared with plans excluding emergency surgery in physician's office

Doctors and office girls should check with the Hospital Benefit Association's closest office or write for specific information before advising HBA patients that benefits are not payable for injuries treated in the office or home or at the scene of the accident.

Pays For Emergency Surgery

Hospital Benefit Association does pay for "emergency surgical treatment" rendered anywhere if treatment is given within 24 hours of the accident causing the injury. If, upon examination for suspected injuries, none are found or if they are very slight, the Association provides a $5.00 benefit for "non-surgical accident treatment".

Fees For X-rays

The Association also provides a schedule of fees payable for x-ray examination of fractures and dislocations in the doctor's office or in the laboratory in cases of emergency surgical treatment.

Operations performed as a result of illness or diseases must be performed in a hospital to be eligible for benefits. This includes T & A and minor surgery on skin eruptions, etc. The member is eligible for hospital benefits up to 10% of the amount provided in his membership certificate for "hospital extras" for minor surgery in the hospital not requiring confinement as a bed patient.

Ask For Folder

A complete folder describing HBA Surgical Benefits will be sent on request. Phone Phoenix AL 8-4888 or Tucson 3-9421.

Remember . . .

If Surgical Benefits are to be paid, all operations must be performed in a hospital, EXCEPT emergency surgery within 24 hours of injury.

NO FIDDLING AROUND, PLEASE, AND NONE OF US WILL BURN!

The Hospital Benefit Association has no "run-around department". Both physicians and hospitals will testify to the fact that nobody . . . but NOBODY . . . is as prompt with benefits payments as Hospital Benefit Association!

The thing that pains us most, Doctor, is the "bucket", which is our office name for the box which contains files waiting for someone in various physicians' offices to get around to sending us a bill! Some of these files sit there for ages, filling up with follow-up letters to the doctor asking him to pul-eeze send us a bill on Mr. Doake's ventriculopuncture for encephalography so we can pay it!

Our form, "Statement of Surgical Charges", is very simple, and we will send you a supply if you will phone Phoenix ALpine 8-4888 or Tucson 3-9421.

However, on simple surgery performed in your office (lacerations, fractures, contusions, sprains, etc.) you can have the girl in your office make out your own bill form the very day you treat the patient and we will get your check back to you quicker than you can say acromioclavicular.

But, please, none of these "Sally Jones . . . $15.00", or "May 14 . . . $10.00"' etc. Simply give use the patient member's name and membership number which is on the Membership Card. Tell us the nature of the accident and the date it happened. And then tell us what you did and what the fee is.

Something like this:

John Jones, No. 12345
Clipped end of finger in cigar cutter 5-15-54
Sewed end of finger back on$00.00

In the instance of hospitalized patients, we will send you the regular Statement for Surgical Charges form, but please have it made out promptly so we can clear up our part of the bill. Then, if a balance is due from the member, you will know exactly what to bill him.

Your cooperation will be appreciated, and we will show our appreciation by prompt payment.



What did YOU tell the Kinsey Interviewer?

STILL A FEW LEFT

We still have a few copies of the booklet published recently by the Better Business Bureau, called "Facts You Should Know About Accident and Health Insurance." This booklet can be a big help when a patient asks about health plans.

We'll be glad to send you one free. Just return the coupon.

Hospital Benefit Association
Box 1272
Phoenix, Arizona
Please send free "Facts" booklet.
Name
Address
City

drugs in this situation is not yet of proved value, but it is logical and is being tried by numerous physicians. It was first suggested by J. A. Myers of Minnesota in 1947 and '48, and recently mentioned by Waring of Denver, Bogen of Los Angeles, et al.

Traut and Benson of San Francisco write of 'Cancer of the Female Genital Tract' for the American Cancer Society. They use their toughest language in speaking of VULVAR LESIONS. . . . "Carcinoma of the vulva is in all probability one of the least competently diagnosed and treated lesions in the entire field of genital cancer. . . . Despite its easily accessible situation. . . . Undue modesty has led to avoidance of examination. . . . The patient is reluctant to seek professional advice . . . she tries various salves recommended in lay publications or by the druggist or a friend. . . . Next, the local physician very commonly underestimates the situation . . . he rightly prefers to advise simple procedures first, but often errs in not taking a biopsy. . . . Furthermore, when the pathologist reports benign hypertrophic or atrophic keratosis, the physician feels reassured (and) may do a local excision. . . . We cannot overemphasize the fact that the newest and most reliable knowledge . . . indicates that preventive surgery of an extensive type (vulvectomy) must be carried out much more frequently when only leukoplakia or keratosis is present."

The program of the Arizona Medical Association Inc. is unique in the 'DUELS' which are set up BETWEEN MEDICAL SCHOOLS. We haven't seen a notice of such a plan in any other state meeting. . . . Greenspan, Stone, and Pollack of STANFORD vs. Sims, Paul, and Young of WISCONSIN, (and the Wisconsin people who can remember the 1953 Rose Bowl are glad it wasn't S.C.).

The United States Public Health Service has pulled out of the MASS-SCREENING FOR TB field. No more cash subsidies. The states and communities will have to take up the slack. . . . They have helped 8.8 million people to be x-rayed, and found 60,000 cases of TB, as well as another huge amount of bland or bizarre chest findings. . . . Apparently economy was a major factor, plus low yields in some areas, but there certainly were other reasons to continue. . . . Hospitals are now the best site and chance for x-raying large numbers of people. The TB associations can help the hospitals and health departments to stimulate and finance such programs.

The journal 'Southern Hospitals' described what a PROFESSIONAL HOSPITAL CONSULTANT sees when he is laid up for a while, and can look around without pressure of time or fee. . . . He knew at once that there was poor service and high prices. The causes included a failure of the public relations officer to notice dissatisfaction; supervision of maids and orderlies was poor; too many 'characters' were colorful but inefficient; ice-service was not organized; faulty liaison between the floor and the diet kitchen caused food waste; maintenance of janitors' equipment caused loss of work and time; there was uneven work distribution among nurses; rules on visiting were irregularly observed; and the admission desk failed to establish good relations with patient and relatives. . . . 'Some hospital!' one might say; or, possibly 'many hospitals'.

A good method of SANITATION FOR WATER-BATHS has been reported by Page of Galveston. . . . A small amount of 'Dreft' is used while the patient is in the bath, and the tub is cleaned with the detergent after the hydrotherapy. . . . Samples of bath-water all contained several varieties of bacteria, but the tub was sterile after the routine described. . . . It didn't say whether ordinary bath-tubs were helped (nor does it say that 'Duz' doesn't).

It is probably just as well, from the medical standpoint, that HEMOPHILIA is uncommon. The new terms (and their abbreviations) would require a brush-up course. . . . The differentiation from hemophiloid states described by Brinkhous and colleagues of Chapel Hill, N. C. Two diagnostic procedures are of great help,—the PARTIAL THROMBOPLASTIN TIME (PTT), and a simplified assay of the ANTIHEMOLYTIC FACTOR (AHF). . . . The PTT test is sensitive for the clotting defect in all but the mildest forms of hemophilia. The AHF assay results vary from 50 to 170% of normal, and in severe true hemophilia there is none of the factor present. . . . After these simple statements the problem becomes complicated and you have to write to Chapel Hill.

A 'sulfa' derivative called Diamox is said by Becker of St. Louis to halt GLAUCOMA. It has no antibacterial effect, and is non-toxic, but it lowers ocular pressure by increasing fluid outflow. . . . Seventy cases . . . We'll see.

VAGUS NERVE FUNCTION can be presumed from recent animal experiments in Boston. . . . Electrical stimulation of the central end of a vagus (cut at the diaphragm), produces retching, vomiting, salivation, changes in breathing, and slowing of the heart rate. . . . Large doses of atropine prevent the pulse changes, but have no other effect. Anaesthetic doses of a barbiturate abolish all of the results of stimulation. . . . The clinical implications are interesting, and one can see why vagotonia is sometimes hard to treat. . . . It might be mentioned that certain types of SMOG produce a syndrome of nausea, dyspnea, and bradycardia. This could partly be a direct effect on the lung, but we favor inhalation, absorption, and effect on the vagus nerves.

ANNOUNCING A NEW PAMPHLET SERIES

A new series of public relations leaflets produced by the AMA for medical societies and individual physicians. They are: 1. Dangers of going to a quack healer for medical treatment; 2. Progress made by medicine in the last 50 years; 3. Steps taken by your AMA to evaluate drugs; 4. Best way to select a family doctor.

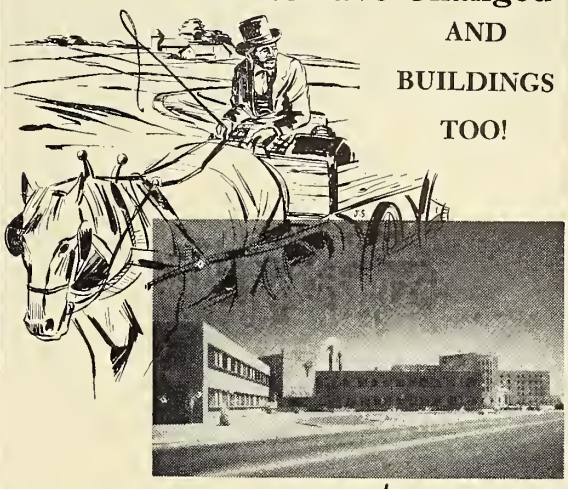
Physicians can order the full series or individual leaflets, without charge, through state medical societies.

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617 N. Stone Avenue, Tucson, Arizona Telephone: Tucson 2-2803

Interesting Topics

RECOMMENDED READING IN CURRENT MEDICAL JOURNALS

OSTEOID OSTEOMA. A nice article by Mary Sherman of New Orleans, in the Journal of the Louisiana State Med. Soc., for December, 1953.

MENSTRUAL IRREGULARITIES. A simple diagnostic approach. Given and Gause, of New York. Texas State Journ. of Med., November, 1953.

ENDOMETRIOSIS. As encountered in private practice. Joe R. Donaldson, Pampa, Texas. Texas State Journ. of Med., November, 1953.

INFECTIOUS MONONUCLEOSIS. Treatment with corticotropin. Bender and Houghton, Seattle. Northwest Medicine, November, 1953. Reports good results in eleven patients.

ARTHRITIS. Recent trends in medical treatment. T. E. Weiss, New Orleans. The Journ. of the Louisiana State Med. Soc., Nov., 1953.

FRACTURES. Hand and Finger, by Wesley H. Burnham, Minneapolis; Wrist Injuries, by E. H. Juers, Red Wing, Minn.; Occulty Dislocation of Ankle, by Millett and Henry, Minneapolis. Very instructive and well illustrated series of articles in Minnesota Medicine for November, 1953.

VACCINATION AGAINST INFLUENZA. Dorland J. Davis, Bethesda, Md., Medical Annals of the District of Columbia, December, 1953. An article on a subject of interest to every practicing physician.

INFLUENZA IN THE U. S. IN 1952-53. Dorland J. Davis, Public Health Reports, December, 1953. An informative article presenting "the broad picture . . . that influenza A was widespread throughout the Americas and Europe during the 1953 season."

URINARY INFECTIONS. The present status of their management. A very readable article covering diagnosis, and antibiotic treatment. By Theodore R. Fetter, Philadelphia. Professor of Urology, Jefferson Medical College. Deleware State Med. Journ., Nov., 1953.

ALCOHOLISM & THE GENERAL PRACTITIONER. In the Deleware State Med. Journ. of November, 1953, is a short article by H. T. McGuire, more logical and sensible than anything the Yale School for the Study of Alcohol ever put out. Good reading for anyone who wants facts and not propaganda.

JAUNDICE. James C. Cain, of the Mayo Clinic, writing in Texas State Journal of Med., December, 1953, gives an excellent analysis and discussion on the differential diagnosis of mild painless jaundice.

PULMONARY CYSTS. A well illustrated article by King and Cole, on this subject appears in Texas State Journ. of Med., for December, 1953.

PANCREATITIS. Studies on. A good paper from Australia by Saint and Weiden, of the Royal Melbourne Hospital. British Med. Journ. December 19, 1953.

TUBERCULOSIS. The Journal-Lancet of April, 1954, is a special issue on Diseases of the Chest, mainly tuberculosis.

VERTIGO AND DIZZINESS. From the Viewpoint of the Internist. By Vince Mosely, in Journ., of South Carolina Med. Ass'n., April, 1954.

PELVIMETRY. Plea for its routine use in primiparas. Hildreth in The Journ. of the Mich. State Med. Soc., for March, 1954.

OUR THERAPEUTIC TOWER OF BABEL. A criticism of our constantly mounting complexity of therapeutic products. Belknap, in The Journ. of the Maine Med. Ass'n., March, 1954.

EHRLICH and von BEHRING. For the historically minded, three articles on Paul Ehrlich and one on Emil von Behring, on British Med. Journ. for March 20, 1954, will be of special interest.

INFECTIOUS MONONUCLEOSIS. Syndrome or a Disease? Shubert, Collee and Smith, in British Med. Journ. for March 20, 1954. They discuss outstanding differences between sporadic and epidemic forms.

ARIZONA Pharmaceutical PAGE

CODE OF ETHICS OF THE ARIZONA PHARMACEUTICAL ASSOCIATION

THE Code of Ethics of the Arizona Pharmaceutical Association is a statement of principles adopted by the profession on a national level for the self-government of its members.

The primary obligation of pharmacy is the service it can render to the public in safeguarding the preparation, compounding, and dispensing of drugs and the storage and handling of drugs and medical supplies.

The practice of pharmacy requires knowledge, skill, and integrity; therefore, the state laws restrict the practice of pharmacy to persons with special training and qualifications and license to them privileges which are denied to others. Accordingly, the pharmacist recognizes his responsibility to the state and to the community for their well-being, and fulfills his professional obligations honorably.

THE PHARMACIST AND HIS RELATIONS TO THE PUBLIC

The pharmacist upholds the approved legal standards of the United States Pharmacopeia and the Nation Formulary, and encourages the use of official drugs and preparations. He purchases, compounds, and dispenses only drugs of good quality.

The pharmacist uses every precaution to safeguard the public when dispensing any drugs or preparations. Being legally entrusted with the dispensing and sale of these products, he assumes this responsibility by upholding and conforming to the laws and regulations governing the distribution of these substances.

The pharmacist seeks to enlist and to merit the confidence of his patrons. He zealously guards this confidence. He considers the knowledge and confidence which he gains of the ailments of his patrons as entrusted to his honor, and does not divulge such facts.

The pharmacist holds the health and safety of his patrons to be of first consideration; he makes no attempt to prescribe for or to treat disease or to offer for sale any drug or medical device merely for profit.

The pharmacist keeps his pharmacy clean, neat, and sanitary, and well-equipped with accurate measuring and weighing devices and other apparatus suitable for the proper performance of his professional duties.

The pharmacist is a good citizen and upholds and defends the laws of the state and nation; he keeps informed concerning pharmacy and drug laws, and other laws pertaining to health and sanitation, and cooperates with the enforcement authorities.

The pharmacist supports constructive efforts in behalf of the public health and welfare. He seeks representation on public health committees and projects and offers to them his full cooperation.

The pharmacist at all times seeks only fair and honest remuneration for his services.

THE PHARMACIST IN HIS RELATIONS TO THE OTHER HEALTH PROFESSIONS

The pharmacist willingly makes available his expert knowledge of drugs to other health professions.

The pharmacist refuses to prescribe or to diagnose; he refers those needing such service to a properly licensed practitioner. In an emergency and pending the arrival of a qualified practitioner, he applies such first-aid treatment as is dictated by humanitarian impulses, scientific knowledge and judgment.

The pharmacist compounds and dispenses prescriptions carefully and accurately, using correct pharmaceutical skill and procedure. If there is any question in the pharmacist's mind regarding the ingredients of a prescription, a possible error, or the safety of the directions, he privately and tactfully consults the practitioner before making any changes. He exercises his best professional judgment and follows, under the laws and existing regulations, the prescriber's directions in the matter of refilling prescriptions, copying the formula upon the label, or giving a copy of the prescription to the patient. He adds any extra directions or

(Continued on Next Page)

caution or poison labels only with proper regard for the wishes of the prescriber, and the safety of the patient.

The pharmacist does not discuss the therapeutic effects or composition of a prescription with a patient. When such questions are asked he suggests that the qualified practitioner is the proper person with whom such matters should be discussed.

The pharmacist considers it inimical to public welfare to have any clandestine arrangement with any practitioner of the health sciences by which fees are divided or in which secret or coded prescriptions are involved.

THE PHARMACIST AND HIS RELATIONS TO FELLOW PHARMACISTS

The pharmacist strives to perfect and enlarge his professional knowledge. He contributes his share toward the scientific progress of his profession and encourages and participates in research, investigation, and study. He keeps himself informed regarding professional matters by reading current pharmaceutical, scientific, and medical literature, attending seminars and other means.

The pharmacist seeks to attract to his profession youth of good character and intellectual capacity and aids in their instruction.

The pharmacist associates himself with organizations having for their objective the betterment of the pharmaceutical profession andcontributes his share of time, energy, and funds to carry on the work of these organizations.

The pharmacist keeps his reputation in public esteem by continuously giving the kind of professional service that earns its own reward. He does not engage in any activity or transaction that will bring discredit or criticism to himself or to his profession.

The pharmacist will expose any corrupt or dishonest conduct of any member of his profession which comes to his certain knowledge, through those accredited processes provided by the civil laws or the rules and regulations of pharmaceutical organizations, and he will aid in driving the unworthy out of the calling.

The pharmacist does not lend his support or his name to the promotion of objectionable or unworthy products.

The pharmacist courteously aids a fellow pharmacist who may request advice or professional information or who in an emergency, may need supplies.

The pharmacist will not imitate the labels of his competitors or attempt to take any unfair advantage of their professional or commercial success. He does not fill orders that he knows are intended for a competitor. He deals fairly with manufacturers and wholesalers and recognizes the significance and legal aspects of brand names and trademarked products. He adheres to fair business practices, meets his obligations promptly, and fulfills his agreements and contracts.

The pharmacist is proud to display in his establishment his own name and the names of other pharmacists employed by him.

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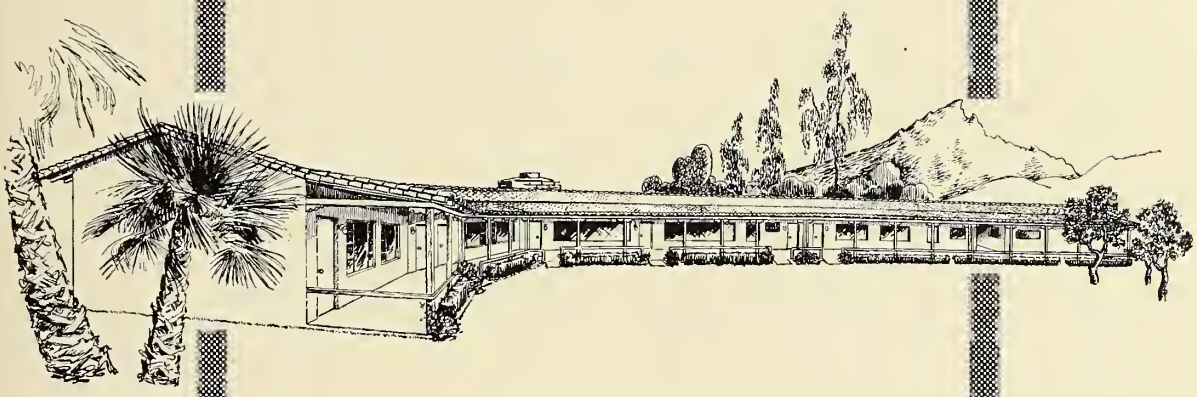
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Organization Page

CIVICS

Norman A. Ross, M.D., Phoenix, Arizona

NATIONAL FOUNDATION FOR INFANTILE PARALYSIS, 120 Broadway, New York 5, New York; State Office, 39 West Adams, Phoenix.

From the National Foundation for Infantile Paralysis this reporter has received copies of two pamphlets, the titles of which are "Control Measures in Poliomyelitis" and "Definitive and Differential Diagnosis of Poliomyelitis".

ARIZONA BLUE CROSS-BLUE SHIELD, 605 North 7th Avenue, Phoenix.

"The Truth About Health Insurance", a reprint from CHANGING TIMES, The Kiplinger Magazine, December 1953, has been distributed to the participating physicians and hospitals of Blue Cross and Blue Shield. We have been informed that copies are available to physicians for distribution to their patients.

This is a part of the program of Blue Cross-Blue Shield to acquaint the medical profession with the economics of health insurance. This service has now been extended, because of its wide physician member interest, so that you may now furnish this reprint to your patients.

Contact Blue Cross-Blue Shield for copies of this reprint as you need them.

THE ARIZONA DIVISION OF THE AMERICAN CANCER SOCIETY, INC., 1429 North 1st Street, Phoenix.

The annual Seminar on Cancer this organization sponsors and finances evidencing recognition of its dependence on our profession.

Call or contact the state or local office of the Cancer Society as we did for material. Call them for your next speaking assignment.

You will be pleasantly surprised by the very cordial greeting, as well as the type and volume of material that will be delivered to your office. Ask about moving pictures.

You will get a list of public educational films both lay and professional. We are advised that all of these are available to us, immediately or later depending on previous commitments. For each film listed there is a descriptive paragraph, and advice as to the type of audience toward which it can best be directed.

Fifteen films are for lay viewing. All but one of these films in the Cancer Society's programming is for medical participation and cooperation. One film exposes quackery.

There are also six films of a technical nature and for professional viewing. All of which are directed toward broad physician interest.

This list is a must in the files of the physician.

ARIZONA SOCIETY FOR CRIPPLED CHILDREN AND ADULTS, 207 Arizona Title Building, Phoenix.

Summer program of the Society:

Three separate programs of aid to Arizona's handicapped children will be conducted during the summer months by the Arizona Society for Crippled Children and Adults (the Easter Seal group).

A five-week course of education and treatment for cerebral palsy youngsters will be held from July 6 through August 6 at Prescott. Purpose of the clinic is to give direct service treatment to cerebral palsy children from all counties where the advantages of a concentrated rehabilitation program do not exist. In addition to the direct service to the children, the program will offer parent education through lectures, demonstrations and actual supervised participation in carrying out treatment procedures.

Children who will attend the clinic have been screened throughout the past year in the Society's statewide itinerant regional clinic program.

Also in operation under the sponsorship of the Society will be a clinic and course in speech problems for the classroom teacher at Flagstaff State College. Here again the children have been referred as a result of the screening done in the regional clinic program.

At the Samuel Gompers Memorial Clinic in Phoenix the Maricopa county chapter of the Society will conduct a special five-week workshop on speech and hearing problems in addition to continuing the regular therapeutic program for orthopedically handicapped youngsters.

ARIZONA TUBERCULOSIS AND HEALTH ASSOCIATION, 11 East Willetta, Phoenix.

As this issue of Arizona Medicine goes to press, hundreds of physicians from every state in the Union, the territories, Canada and several foreign countries are gathering in Atlantic City, New Jersey to celebrate the Fiftieth Anniversary of the founding of the National Tuberculosis Association.

In a recent report to the Board of Directors of the National Tuberculosis Association, its Committee on Policy reported "that tuberculosis remains the major health problem in the United States which is known to be preventable. While great strides have been made in our country-wide program, nevertheless the program for the control of tuberculosis for the major part of the nation is far from adequate."

To achieve **eradication** of tuberculosis and to prevent **resurgence** of the disease, the Committee urged that existing programs be intensified and **supplemented** by increasing concern with **broad public health programs**, which will increase the resistance in man against tuberculosis.

Department of Otolaryngology University of Illinois

The Department of Otolaryngology, University of Illinois College of Medicine, announces its basic science course in otolaryngology offered by its affiliated hospitals. This combined postgraduate course and residency will begin its 1954-55 session on July 1, 1954. Other openings occur throughout the year. Residencies are available at either the Research and Educational Hospital or the Illinois Eye and Ear Infirmary, or a continuation of the training program may be arranged for the Veterans Administration Hospital at Hines.

A stipend is offered on the following basis:

First year residency$1320 annually
Second year residency 1620 annually
Third year residency 1920 annually

Application forms are available on request to the Department of Otolaryngology, University of Illinois College of Medicine, 1853 West Polk Street, Chicago 12.

BOOK REVIEW

REVIEW OF PHYSIOLOGICAL CHEMISTRY by Harold A. Harper, Ph.D., published by Lange Medical Publications, University Medical Publishers, P. O. Box 1215, Los Altos, California, Price $4.00.

This is one of the most useful and practical reference books on this subject which I have seen. This represents the latest knowledge in a rapidly advancing subject arranged in lecture type presentation with many diagrams and illustrations to clarify the material presented. These illustrations are very much reminiscent of blackboard illustrations given during the course of lectures. Very much of the material is presented in tabular form for ready reference or quick review. According to the author the book is intended as a supplement to the standard text and biochemistry and a companion volume for the student in such courses. It is also hoped that the book would serve as a means of review for the physician preparing for state and specialty boards and a means for keeping abreast of this rapidly expanding subject. I feel that the aims have been well realized and I feel that every physician who sees this volume will want it for his library. It is worthy of note that the book is put up in an inexpensive form with an inexpensive cardboard binding, keeping the price down to a figure which should make it possible to get the new revisions which we hope will be published from time to time.

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CORPORATE PRACTICE OF MEDICINE

Resolution Adopted by House of Delegates
Arizona Medical Association, Inc.

April 28, 1954

WHEREAS, current standards of medical practice in the United States are unequaled elsewhere in the world; and

WHEREAS, freedom of choice of physician, with direct and immediate physician-patient relationship, is essential if patients are to enjoy the best of medical care; and

WHEREAS, American medicine has endeavored in every possible way to make prepaid medical care available to the public on a voluntary basis; and

WHEREAS, in connection with certain prepaid medical care plans, a temporary and purely economic advantage seems to be afforded to an operation under a closed panel system with full or part-time salaried physicians; and

WHEREAS, the interjection of a third party in the physician-patient relationship is obviously undesirable, since the interest of the employer must necessarily be dominant, resulting inevitably in more or less interference with professional practices, as, for example, limitation respecting certain procedures and/or materials, the utilization of nurses in lieu of physicians to an undesirable degree, et cetera; and

WHEREAS, while the corporate practice of medicine is illegal in Arizona, the constructive objectives of such law are lost when, in the functioning of a closed panel system, there is superimposed a corporate overlord (or an all-powerful layman) with total and effective control of the closed panel prepaid medical care plan and of all the employees thereof; and

WHEREAS, in connection with the functioning of these closed panel systems, there is a tendency, when groups are insured,—and it is probably an absolute necessity if such systems are to continue to exist—to require that every employee in a given group be covered, thus making "captives" of many unwilling individuals; be it therefore,

RESOLVED that the Board of Directors of the Maricopa County Medical Society after full consideration because of the inherent threat to the high standards of medical practice, and particularly because of the potential injury to individual captive patients, does now and hereby declare that the operation of such closed panel systems in prepaid medical care plans is undesirable and injurious to the public welfare, and be it further

RESOLVED that it is the expressed opinion of the House of Delegates of the Arizona Medical Association that any member of this society who participates or practices as a member of a closed panel system in a prepaid medical care plan such as hereinabove described which has not been approved by the Medical Council of the Arizona Medical Association or its House of Delegates is not acting in a manner in accordance with the letter or the spirit of the Principles of Medical Ethics of the American Medical Association.

FOREIGN-TRAINED DOCTORS CREATING PROBLEM, CONFERENCE TOLD

LICENSURE and medical care problems created by the heavy influx of foreign-trained doctors commanded a great deal of attention at the 50th annual Congress on Medical Education and Licensure in Chicago, February 7-9.

The congress was sponsored by the American Medical Association's Council on Medical Education and Hospitals, the Federation of State Medical Boards of the United States and the Advisory Board for Medical Specialties.

"The infiltration of the medical profession of the United States by large numbers of doctors who have not been able to obtain a proper basic professional education is almost certain to lower the general level of practice in this country," Dr. Willard C. Rappleye, New York, dean of Columbia University College of Physicians and Surgeons, told the meeting.

"The numbers coming in are so large that they cannot readily be absorbed without that effect."

Dr. Rappleye pointed out that the United States government, in fostering international good will, is admitting large numbers of displaced persons, including physicians about whose professional ability no questions are asked. More will be admitted by recent legislation which permits the entrance of several hundred thousands of immigrants above previous quotas, he said.

He added that unless this situation is met

"with courage and the conviction that we shall not surrender the results of 40 years of effort in raising the standards of medical licensure, practice and education," we may revert to conditions resembling those of 50 years ago.

Dr. Stiles D. Ezell, Albany, secretary of the New York Board of Medical Examiners, also called attention to the inadequacy of the medical training of most of the foreign doctors seeking to practice in the United States.

Dr. Ezell said that except for Great Britain and the Scandinavian countries the last war brought destruction and degeneration to European medical education.

"Even before the elimination of the last of the unapproved medical schools in this country, there had begun a migration of physicians to this country which has now reached a total of more than 20,000," he stated. "The challenge in this fact is that the profession has not been prepared to understand what is involved in such a massive movement, nor has it realized the numerous deficiencies involved in the collective educational background of this group."

He pointed out that large numbers of foreign graduates have completed specialized training without any consideration of the deficiencies in their basic medical training or their eligibility for licensure.

Dr. Edward L. Turner, Chicago, secretary of the Council on Medical Education and Hospitals, recommended the adoption of a uniform plan for screening the professional competence of foreign-trained doctors.

Such a uniform procedure, Dr. Turner said, would be of greater assistance to state medical licensing boards than the present attempts to evaluate and list foreign medical schools. He pointed out that there are problems and difficulties in evaluating foreign medical schools which are "almost insurmountable."

Dr. Turner reported that the Council on Medical Education and Hospitals and the executive council of the Association of American Medical Colleges have compiled a list of 39 foreign schools which provide basic medical education on a par with that of approved schools in the United States, but said there are more than 550 medical schools in the world.

He said that while the council has endeavored to indicate that the absence of a school from this current listing does not indicate either approval or disapproval, but means primarily lack of adequate information, the absence of listing frequently serves to deny a graduate the right to examination before a state board.

"It seems advisable that there should be a careful analysis of state medical practice acts with serious consideration being given to the cooperative development of some commonly acceptable yardstick or screening mechanism to evaluate competence of the foreign graduate," Dr. Turner stated.

He suggested that the National Board of Medical Examiners could become a highly effective aid to state boards in determining whether foreign-trained physicians were eligible for further state board consideration for licensure. The National Board, at the request of the state board, could conduct the examination for professional competency, and the state board could then determine if the candidate met other requirements for licensure, he added.



ANNUAL MEETING INTER-SOCIETY CYTOLOGY COUNCIL

The second annual meeting of the Inter-Society Cytology Council will be held in Boston, Friday and Saturday, November 12 and 13, 1954. Those having material to present are invited to submit three copies of the title and an informative abstract of not more than 200 words to Dr. John Graham, Chairman of the Program Committee, 32 Fruit Street, Boston, Massachusetts, before July 15, 1954. Abstracts of all papers accepted will be published in the official program.

For additional information please contact the Secretary - Treasurer, Inter-Society Cytology Council, 634 North Grand Blvd., St. Louis, Mo.

Woman's AUXILIARY



Left to right: Mmes. Brick P. Storts, Tucson, President; Roy Hewitt, Tucson, President-Elect; George S. Enfield, Phoenix retiring president; John J. Kloby Yuma, 2nd Vice President; and M. W. Phillips of Prescott, Secretary.

REPORT OF CONVENTION CHAIRMAN
Auxiliary to the State Medical Association, 1954

THE 1954 Arizona State Medical Convention was held from April 25-28 at the San Marcos Hotel in Chandler, Arizona. The success of this convention was largely due to the excellent cooperation and work on the part of the auxiliary members from Chandler. Mrs. James Meason, Mrs. C. L. von Pohle, Mrs. D. I. Arnow and Mrs. Seth Douthett all worked hard and faithfully in carrying out their various duties.

In the fall, all arrangements for meeting rooms, room for our state president, etc., were made with Mr. Robert Carpenter, the secretary of the State Medical Association. These were checked with Mr. John Quarty, manager of the San Marcos Hotel.

Mrs. Enfield and I worked on a tentative program in February and this was sent to Mr. Carpenter to publish in the final program.

In April an invitation to the meetings and the social functions was written for Arizona Medicine. On behalf of the president the following people were notified of their duties during the convention:

Registration—Mrs. Douthett and Mrs. Arnow.

Transportation—Mrs. C. L. von Pohle.

Publicity—Mrs. A. B. Taylor.

Decorations—Mrs. James Meason.

Brunch—Mrs. D. G. Carlson.

Luncheon—Mrs. D. I. Arnow.

Address of Welcome at the luncheon—Hostess County President, Mrs. Paul Jarrett.

Response—Mrs. Harry Southworth, Prescott.

Greetings at the Brunch—Mrs. Robert Cummings, incoming county president.

Installation of Officers—Mrs. J. M. Greer.

In March the names of the guest orators were secured from Mr. Carpenter and personal notes were written to each, inviting their wives to be the guests of the auxiliary for the luncheon and the brunch. Personal notes were also written to the following men, inviting them to the opening session luncheon:

1. State President.
2. Immediate Past President
3. Chairman of the Advisory Council.
4. Secretary of the State Association.
5. The Rev. Mr. Charles Kendall.

In March the chairman arranged for the printing of the tickets through O'Neil's Letter Shop, after the price and menu were decided on by the chairman of those affairs. The luncheon was $3.00 and the brunch $2.25. The decoration chairman, Mrs. Meason arranged for the corsages for the two affairs. These were given to all the women at the head table and to the wives of the guest orators. The luncheon and the brunch were both presided over by the state president, Mrs. George Enfield. At the head table at the luncheon were:

State President of the Auxiliary
State President of the Medical Ass'n.
President-Elect of the Auxiliary
First Vice-President of the Auxiliary
Parliamentarian
National Representative
Recording Secretary of the Auxiliary
Chairman and two members of the advisory council.
Rev. Charles Kendall.

Luncheon was $3.00 and there were 96 present.

The seating at the head table for the brunch was the same with the exception of the men. Mrs. J. M. Greer was at the head table as she was to install the new officers. Also invited to sit at this table were the wife of the president of the state association, chairman of the brunch, and the secretary of the state association.

The new state auxiliary president was introduced last and asked to introduce her new board. This brunch was $2.25 and there were 91 present. The group was entertained by a styleshow by Goldwaters, Mrs. John Green, Mrs. C. C. Craig, Mrs. Robert Cummings and Mrs. John Eisenbeiss were very attractive models and added a great deal to the affair.

Tuesday night we had planned a dutch treat dinner, having a list at the registration desk. Very few signed up, but over 60 turned out for this. We had mostly planned it for wives whose husbands might be attending meetings but as it turned out there were a great many men there. Monday morning there was a golf game for interested women and the prizes for this event were given out at the luncheon. We had planned an evening of bridge on Monday night but as so few came we gave the prizes as door prizes at the brunch.

This 1954 convention was larger than any so far. 139 women were registered. The San Marcos Hotel was filled to capacity and in between meetings the swimming pool and other facilities were enjoyed to the utmost.

The Convention closed with the dinner dance Wednesday night. This was a beautiful party in all respects.

Respectfully submitted,
Isabel A. Cruthirds
Phoenix, Arizona

NEWS NOTES

A course in "Newer Developments in Cardiovascular Diseases" will be given at The Mount Sinai Hospital, New York, October 11th through 15th, 1954, under the auspices of the American College of Physicians. As the title implies, the recent advances will be stressed. Dr. Arthur M. Master and Dr. Charles K. Friedberg will direct the course and prominent cardiologists and cardiac surgeons will participate.

ANNUAL MEETING AMERICAN ASSOCIATION OF BLOOD BANKS

Seventh Annual Meeting of American Association of Blood Banks, Shoreham Hotel, Washington, D. C., September 13-14-15, 1954.

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TWENTIETH ANNUAL MEETING

Edgar Burns, M. D., New Orleans, La.
Prof. and Chairman of Dept. of Urology, Tulane Univ. School of Medicine.

Frederick B. Campbell, M. D., Kansas City
Executive Staff General Hospital and St. Mary's Hospital; Past President American Proctological Society.

Ramon Castroviejo, M. D., New York City
Director of the Corneal Surgery Clinic of the New York Eye and Ear Infirmary; Clinical Prof. of Ophth. of New York Univ. Postgraduate School of Medicine.

John J. Conley, M. D., New York City
Chief of the Head and Neck Dept., Pack Medical Group; Clin. Prof. of Otolaryngology New York University.

Matthew S. Ersner, M. D., Philadelphia, Pa.
Prof. and Head of the Dept. of Otorhinology and Rhinoplasty, Temple Univ. School of Med.

C. Allen Good, M. D., Rochester
Section of Diagnostic Roentgenology, Mayo Clinic; Mayo Assoc. Prof. Radiology Foundation, Graduate School, University of Minnesota.

Franklin M. Hanger, M. D., New York City
Prof. of Medicine, Columbia Univ. College of Phys. & Surg; Attending Physician, Presbyterian Hospital.

L. E. Harris, M. D., Rochester
Consultant, Section of Pediatrics, Mayo Clinic; Instructor in Pediatrics, Mayo Foundation, Graduate School.

William K. Keller, M. D., Louisville
Prof. of Psychiatry, Univ. of Louisville, School of Medicine.

Clarence S. Livingood, M. D., Detroit
Physician-in-charge, division of Dermatology, Henry Ford Hospital, Detroit

A. E. Maumence, M. D., San Francisco
Prof. of Surgery of Ophth. Stanford University School of Medicine.

Gordon Meaker, M. D., New York City
Assoc. Attending Surgeon, Gastric and Mixed Tumor Services, Memorial Hospital, N. Y. C.; Consultant, Surgery (Gastro.) Roosevelt Hosp., New York City.

Lester M. Morrison, M. D., Los Angeles
Senior Attending Physician and Director Atherosclerosis Research Unit, Los Angeles County General Hospital, Lecturer in Medicine, Medical School, College of Medical Evangelists.

Myron Prinzmetal, M. D., Los Angeles
Attending Physician, Cedars of Lebanon Hosp.; Assoc. Clinical Prof. of Medicine, Univ. Calif.

Duncan E. Reid, M. D., Boston
Prof. of Obstetrics, Harvard Medical School; Obstetrician-in-chief, Boston Lying-in Hospital.

Danely P. Slaughter, M. D, Chicago
Assoc. Prof. Surgery & Director Tumor Clinic, Univ. of Illinois Medical School.

Donald H. Stubbs, M. D., Alexandria, Virginia
Clinical Prof. of Anesthesia, George Washington Univ. School of Medicine, Washington, D. C.

I. Snapper, M. D., Brooklyn, New York
Director of Medicine and Medical Education Beth-el Hospital.

T. Campbell Thompson, New York City
Assoc. Prof. of Clinical Surgery (Orth.) Cornell Univ. Medical College.

John C. Ullery, M. D., Philadelphia
Assistant Prof. of Obstetrics and Gynecology, Jefferson Medical College.

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Meeting Simultaneously will be three separate sections: Medical, Surgical and Eye, Ear, Nose, and Throat. Please register now, mailing your check to the Postgraduate Medical Assembly of South Texas, 229 Medical Arts Building, Houston, Texas.

ARIZONA MEDICINE

Journal of ARIZONA MEDICAL ASSOCIATION

VOL. 11, NO. 7 JULY, 1954

TABLE OF CONTENTS

OFFICERS

ARIZONA MEDICAL ASSOCIATION, INC., DIRECTORY 6A
WOMAN'S AUXILIARY DIRECTORY 6A
COUNTY MEDICAL SOCIETY OFFICERS, 1954 DIRECTORY 25A

ORIGINAL ARTICLES

THE USE OF MICRONIZED VITAMINIZED STILBESTROL IN THE TREATMENT OF SIXTY-FOUR CASES OF SEVERE THREATENED ABORTION 247
Karl John Karnaky, M.D., Houston, Texas.

A CASE OF CARDIAC ARREST RESUSCITATED BY CARDIAC MASSAGE AND NOR-EPINEPHRINE 250
Drs. Frederick A. Shannon and William N. Henry, Wickenburg, Arizona.

MEDICAL PROBLEMS

PHOENIX CLINICAL CLUB 254
Frank J. Milloy, M.D., Phoenix, Arizona.

THE PRESIDENT'S PAGE

ARIZONA MEDICAL ASSOCIATION 262
Oscar W. Thoeny, M.D., President, Arizona Medical Association.

EDITORIAL

ORCHIDS ARE IN ORDER 263

TOPICS OF CURRENT MEDICAL INTEREST

RX., DX., AND DRS. 265
Guillermo Osler, M.D.
POST OFFICE URGES MORE CAREFUL BLOOD PACKAGING 261
ANNUAL ASSEMBLY IN OTOLARYNOGOLOGY 261
BOOK REVIEW—Cure Your Nerves Yourself 263
LIST OF ARIZONA PHYSICIANS ATTENDING A.M.A. ANNUAL MEETING 264
AN INVITATION 264
REPORT ON ACTIONS OF THE HOUSE OF DELEGATES 267
J. D. Hamer, M.D., Phoenix, Arizona
INTERESTING TOPICS—Recommended Reading in Medical Journals 271 and 285
ORGANIZATION PAGE 272
NEW PHYSICIAN'S AND DENTIST'S LOUNGE 273
ARIZONA PHARMACEUTICAL PAGE—Your Help Is Needed 274
Arizona Pharmaceutical Page
INTERESTING NOTES 276

WOMAN'S AUXILIARY

ANNUAL MEETING 278
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DIRECTORY

LABORATORIES 25A
SANATORIUM DIRECTORY 27A
DRUGGISTS DIRECTORY 29A
PHYSICIANS DIRECTORY 31A

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Original ARTICLES

THE USE OF MICRONIZED VITAMINIZED STILBESTROL IN THE TREATMENT OF SIXTY-FOUR CASES OF SEVERE THREATENED ABORTION

Karl John Karnaky, B.A., M.D.
Houston, Texas

THERE is, as in most other conditions in medicine, some controversy about the value of estrogens in the treatment of threatened abortions. One of the apparent errors in interpreting the results of any treatment of threatened abortion is that many physicians believe the high percentage of results so often reported in patients who carry a pregnancy to term after one miscarriage is due entirely to the treatment. Actually the results without treatment are 75 to 80 per cent. Malpas has shown that after a woman has lost one baby, 78 per cent can have a normal pregnancy; after losing two babies, 62 per cent; after losing three babies, 27 per cent; and after losing four babies only 6 per cent could be expected to carry a pregnancy to term.

It has been estimated that 10 to 20 per cent of all pregnancies in women are lost. Williams places incidence at 20 per cent; Taussig at 10 per cent; Malins at 10 per cent; Meyer at 22 per cent; and Malpas who studied 6000 pregnancies, at 18 per cent. Therefore from 10 to 22 per cent of all first pregnancies may end in abortion. Yet after losing one, two, three or four consecutive pregnancies a greater per cent is expected to abort, as stated above: namely 22, 38, 73, and 94 per cent, respectively.

In the early days of stilbestrol therapy, many cases diagnosed as threatened abortion were actually complete and inevitable abortions or dysfunctional uterine bleeding cases and were treated with stilbestrol. Of course such treatment caused some to believe that stilbestrol was of no value. In fact, these cases were already *hopeless* when stilbestrol was started. Failure was due to diagnosis, not to the drug. The author has seen many such cases with the cervix well dilated, part of the placenta in the cervical canal, or the entire placenta lying in the vagina, yet these patients were diagnosed as threatened abortion. Stilbestrol obviously cannot correct such cases. However with adequate dosage it will stop the bleeding within twelve to twenty-four hours.

The purpose of this paper is to review 64 consecutive cases of severe threatened abortion, in which the patients had severe cramps, and bleeding for more than 3 days, and were treated with large doses of micronized, vitaminized stilbestrol. No extra vitamins, progesterone or bed rest was allowed. No bed rest was allowed especially for this study.

ETIOLOGY

There are controversies in regard to the etiology of abortions. Streeter emphasized that the death of the embryo usually occurs approximately six weeks before the abortions. Hertig found that 90 per cent of all spontaneously aborted products revealed pathologic conditions absolutely or relatively incompatible with further development of the pregnancy. He found 46 per cent of his abortions due to blighted ova. Mall and Meyer found 48 per cent incom-

From the Departmen of Gynecology, Research Division, Jefferson Davis Hospital and Baylor University School of Medicine, Houston, Texas.

patible with further development of pregnancy; Irving found that 70 per cent of abortions he studied were due to developmental defects, 52 per cent of which were due to ovum defects and 18 per cent to defects of all aborted products which fell in the relatively incompatible group.

It is feared by some that if one treated such patients there is danger that an abnormal baby might be carried to term. One child in this series was born blind, but the pediatrician in charge stated that he had seen such cases in patients before there was such a drug as stilbestrol and in patients who never received this preparation.

This report consists of 64 consecutive cases of severe threatened abortion. These patients had had 88 previous pregnancies, losing 49 of these or 55.6 per cent. On micronized, vitaminized stilbestrol in sufficient amounts these women lost 19 or 29.6 per cent of the 64 pregnancies.

MICRONIZED, VITAMINIZED STILBESTROL*

By micronizing stilbestrol the crystals are made to approximate 0.5 microns in size which is about 15 times smaller than a red blood cell (7.5 microns). Therefore micronized crystals can easily pass between gastrointestinal and blood vessel cells into the blood stream. Since all micronized stilbestrol is absorbed, which is not true for most ordinary stilbestrol on the market which passes on through the gastro-intestinal tract into the stool, much less micronized stilbestrol is required.

By vitaminizing stilbestrol all of it is utilized as an estrogen because B Complex and especially Folic acid changes the toxic, inert, pre-stilbestrol into a non-toxic, estrogenic substance.

It is obvious that if the fertilized ovum is so abnormal as to be incompatible with development it cannot survive. Some believe the condition of the ovum is of utmost importance. Others believe the endometrial bed is more important. The giving of stilbestrol causes an increase in alkaline phosphatase in the secretary endometrium which has to do with metabolism of carbohydrates, fats and protein in the endometrium. These are utilized by the fertilized ovum for its early growth and development. Excess progesterone inhibits alkaline phosphatase so early glycogen metabolism may be stopped. An excess of progesterone could be a cause of many early abortions. Stilbestrol stimulates the L.H. (Leutinizing) factor of the anterior pituitary. The necessity of a well developed maternal and fetal blood supply at the placenta site is well known. Hormones and vitamins are essential. This series of patients all had severe cramps daily and cervical bleeding for 3 or more days. These patients were selected because of severity of symptoms and signs of abortion to see experimentally just how many patients could be carried to term; and to see if any abnormal product of conception could be carried to term on stilbestrol. Because these cases were so severe, it was thought that the possibility of an abnormal infant being carried to term would be markedly increased. Yet none of these cases carried an abnormal infant to term.

If one could tell which abortion is inevitable, then many such pregnancies could be spared estrogenic therapy. The author knows no way to identify such cases other than by inspection of the cervix with a sterile speculum. This is a fair way to tell which patients should or should not get stilbestrol.

In none of these cases was the cervix dilated.

As stated by Dr. Eastman, "Nevertheless we have to face the fact that we must treat nineteen or twenty cases needlessly in order to help the occasional case in which various therapeutic measures may be effectual." Even if bed rest and sedatives will correct the spotting, low backache, cramping and bleeding it does so slowly—especially the bleeding. If cramps are controlled the patients usually have to be given large doses of some sedative. The big advantage of micronized, vitaminized stilbestrol is that if the doses are large enough (100 milligrams to 200 milligrams) and frequent enough (every 15 minutes), bleeding and cramps stop within a few hours. Another advantage of large doses of micronized, vitaminized stilbestrol is that the patient can be up and about after the first 4 to 24 hours. Bed rest was not ordered for this special group of patients after stilbestrol was started, even though six of these 64 patients had to stay in bed for more than 3 months in previous pregnancies. Micronized, vitaminized stilbestrol has eliminated the prolonged bed rest in most threatened abortion cases.

Pregnant women tolerate enormous doses of stilbestrol and they seldom have side reactions

*Supplied through the courtesy of Dr. Frank L. Haley, Medical Director, Grant Chemical Company, Inc., 121 East 24th Street, New York 10, N. Y. Composition of desPLEX tablet: Micronized stilbestrol 25 mg., thiamine hydrochloride 2 mg., riboflavin 2 mg., pyridoxine hydrochloride 1 mg., ascorbic acid 50 mg., calcium pantothenate 10 mg., niacinamide 50 mg., folic acid 0.25 mg. vitamin B12 0.5 mcg.

regardless of the dose. If the patient is nauseated from stilbestrol, it is strong evidence that she is not pregnant.

In patients who have lost one to three babies, micronized, vitaminized stilbestrol is given before pregnancy. The patient is given ¼ of an 0.05 milligram tablet* daily as long as she tries to become pregnant even if it requires many months or years, and as soon as she misses a mentrual period and her basal body temperature remains above 98° for 3 or more days she takes ¼ of a 25 milligram micronized, vitaminized stilbestrol tablet every morning on arising. If she is pregnant, nausea is seldom experienced from this dose, so this aids the diagnosis of pregnancy. Sufficient amounts of micronized, vitaminized stilbestrol cause an increase of the enzyme alkaline phosphatase which causes an increase of glycogen in the endometrium for early nourishment of the fertilized ova. This daily dose of ¼ of a 25 milligram tablet is kept up until the eighth month of pregnancy. If the patient starts to have vaginal spotting, bleeding, cramps or low backaches, 100 to 400 milligrams of micronized, vitaminized stilbestrol is taken every 15 minutes until all signs and symptoms stop. This usually requires from 2 to 12 hours. Then according to the severity of the case, the following dose is given: One hundred milligrams of micronized, vitaminized stilbestrol four times a day for 7 days; 50 milligrams four times a day for 7 days; 25 milligrams three times daily for 7 days, reducing 25 milligrams weekly until 25 milligrams is being taken daily in the morning. Most of the stilbestrol is given the first thing in the morning, such as 100 milligrams every morning, 50 milligrams at noon and 25 milligrams at bedtime. Some patients may require 500 to 1000 milligrams daily to stop all cramping, pains, spotting, bleeding and low backache. That daily dose is given which keeps all these signs and symptoms controlled. After the eighth month, the stilbestrol is stopped. If the baby dies, stilbestrol does not cause the products of conception to be retained, but appears to aid in the expulsion of it.

*Vagades Grant Co.

SUMMARY

Sixty-four consecutive patients with severe threatened abortion who had lost 88 previous pregnancies were given sufficient and large doses of micronized, vitaminized stilbestrol; only 19 or 29.6 per cent aborted. No bed rest, vitamins or sedatives were used.

With use of micronized, vitaminized stilbestrol bed rest is not necessary. After one month on large doses of stilbestrol and if all signs or symptoms have not recurred, the dose is decreased by 25 milligrams daily until one to two 25 milligram stilbestrol tablets are being taken every morning. Stilbestrol is given in the morning because the patient is up and about.

The required amount of stilbestrol varies in each and every individual. The amount needed is that amount which stops vaginal spotting, bleeding, cramps and low backache, whether it be 25 milligrams or 2500 milligrams daily. In cases of severe threatened abortion, usually 100 milligrams daily in the morning will be sufficient.

Bed rest may be used for a few hours, but after that it is not necessary. A well balanced diet and especially vitamin B Complex aids in metabolism of estrogens. Only micronized, vitaminized stilbestrol is necessary. Progesterone has been found to be of no value and is not necessary.

A CASE OF CARDIAC ARREST RESUSCITATED BY CARDIAC MASSAGE AND NOR-EPINEPHRINE*

Frederick A. Shannon, M.D., and William N. Henry, M.D.
Wickenburg, Arizona

THE patient, a 68-inch, 160-pound, 26-year-old Caucasian male, was first seen by the senior author at 1:00 A.M. on the 10th of September. He entered the Wickenburg Community Hospital in an ambulatory state complaining of pain in the right lower quadrant. The pains had started four hours previously and were at first periumbilical in location. They were cramping in nature and were attended at first by nausea, followed by an episode of vomiting shortly before the patient entered the hospital.

Physical examination revealed tenderness to pressure over McBurney's point accompanied by considerable rebound tenderness. The abdomen was moderately rigid, rendering adequate palpation impossible. A right-sided point tenderness was noted on rectal examination; the prostate was normal. The heart and lungs were likewise normal, and the examination was otherwise negative. The C.B.C. demonstrated a 90% hemoglobin (14.55 gms.); W.B.C., 16,000; eosinophiles, 2; juvenile cells, 1; stab cells, 7; polymorphonuclear cells, 79 lymphocytes, 11. The mazzini was negative, as was the urine.

In view of the laboratory findings, it was not felt advisable to postpone surgery until morning. At 1:55 A.M. the patient was given a quarter-grain of morphine sulfate, 1/150 grain of atropine, and three grains of seconal. A spinal anesthetic consisting of 75 mgm. of procaine and 15 mgm. of Pontocaine was administered at 2:40 A.M. His blood pressure at this time was 130/84. At 2:30 A.M. the abdomen was entered by means of a transverse incision over McBurney's point. The appendix was located and found to be acutely inflamed. Following removal, the peritoneum was closed with a running suture. At 3:15 A.M. in the process of closing the fascia with interrupted cotton suture, the patient became abruptly cyanotic with a rapid, weak pulse and shallow respirations. Immediately thereafter pulse and respirations could not be demonstrated. The junior author at once left his post as assistant and initiated forced respiration with 100% oxygen through a Heidbrink anesthetic machine. This was continued throughout the rest of the procedure.

The decision to enter the chest was made approximately two and a half minutes later. Dispensing with antiseptic measures, the fourth interspace was incised on the left side, and cardiac massage was instigated after a total lapse of slightly more than three minutes. A massage rate of approximately 50 strokes per minute was maintained for about 40 seconds until a syringe of nor-epinephrine suggested by the junior author could be obtained. Cardiac massage was then interrupted temporarily and 1 cc. of the preparation was injected into the right ventricle. The complete quiescence of the heart was interrupted by the needle prick, and ventricular fibrillation ensued. Immediately following the injection, the fibrillating pattern was replaced by a rapid, shallow heart rate estimated at 160. Massage was superimposed and the rate slowed down to perhaps 120 with considerably greater cardiac output. About four minutes after arrest, the thoracic incision started bleeding, and this was followed by diminution of cyanosis. Cardiac massage was cautiously discontinued, and the thoracic incision was packed with a hot lap. A blood pressure of 110/100 was obtained. During the next minutes the pulse slowed to less than 100 and the patient's blood pressure climbed to 124/90. Voluntary respirations started at this point but were of low amplitude and required supplementation.

The abdomen was closed at 3:30 A.M. Ten minutes later the respirations were improving, the blood pressure was constant at 124/90, and the pulse had stabilized at 84. (A few interrupted beats were noted three minutes earlier.) The thoracic incision was then closed as rapidly as possible.

From 3:45 until 8:30 A.M. the blood pressure varied between 140-164/90, the pulse remained steady at 80, and the respirations were shallow but voluntary at a rate of 50/minute. No reflexes could be obtained. Antibiotic therapy was undertaken during this period. By 9:00 A.M., although the rate was unaltered, the respirations had deepened, and the patient was obviously breathing with greater ease. Nasal oxygen was started at this time. Slight movement of the pupils was now noted, although other reflexes

*Levophed, supplied by Winthrop-Stearns, Inc.

could not be elicited. By 11:15 A.M. the pulse had climbed to 118 and respirations were well over 60. The patient became cyanotic and the respirations weak and labored, necessitating reinstigation of closed oxygen. At 12:15 P.M. the Babinski was positive, ankle clonus was present, and the patient was making restless movements. Other reflexes were weak but definite. In spite of a lack of diminution in pulse and respiration, nasal oxygen once more replaced the closed system as the patient's general condition was much better. By 2:00 P.M. the patient's blood pressure had climbed to 152/90, the pulse was 118, and the respirations, 50. At 5:00 P.M. the blood pressure had dropped to 136/70, and the patient was in a condition of decerebrate rigidity, with tonic convulsions resulting from tactile stimuli. During the course of the night the rigidity diminished; by the next morning it had entirely disappeared, and the patient was sitting up in bed. There was a curious intentness about his actions, and he would stare in a blank manner at the source of any activity. While having his blood pressure taken, he stared at the operator in an owl-like, unblinking manner. His reflexes were now weak rather than spastic. He responded to questions in a vacant manner but was oriented as to time, place, and name. By that afternoon he was showing signs of hyperexcitability and wandered around the ward trying to find his clothes. On the 12th of September the excitability had increased, and the patient would wander repeatedly into the kitchen looking for his shoes. His blood pressure, temperature, pulse, and respirations were normal. Breath sounds were diminished to ausculation on the left side. (The chest was not closed under positive pressure.) An x-ray of the chest showed almost complete absorption of the extrapulmonary air. There were no residua except for a pericardial adhesion. On the 13th of September the patient was exhibiting maximum hallucinations and was under the impression that rats were holding up the chandelier. At no time was he violent or aggressive. By the 14th the patient's excitability and hallucinations were gone. He was completely rational and complained of nothing except a slight "pull" beneath his thoracic incision when he breathed deeply.

At no time was the blood chemistry found to be abnormal, although the serum potassium was at the upper limit of normal (21) on the afternoon of September 10th. An electrocardiogram was likewise within normal limits. When last seen on November 4, the patient had gained five pounds, had no physical complaints, and had long since returned to his truck driving duties. His wife stated that he was not excitable or moody and seemed "the same as before surgery."

Two previous cases were attended by the junior author. The first consisted of a 26-year-old Caucasian female undergoing a Caesarean section with a spinal anesthetic. Before closing the peritoneum, cardiac arrest occurred, and her chest was opened immediately. Manual compression of the heart was instituted, while a cut-down was simultaneously being carried out over the right femoral vein. Four milliliters of Levophed in 1000 milliliters of five per cent saline was started *via* the femoral vein. The cardiac musculature responded with alternating contractions, nearly rhythmic and fibrillating in nature. The latter could not be obliterated although such standard measures as electric shock and application of procaine and calcium solutions were employed. Ventricular dilation ensued, terminating in death approximately six hours after the initial arrest.

The second case was that of a 50-year-old Caucasian male, being operated on for acute appendicitis under ether anesthesia. Again, cardiac arrest occurred before the peritoneum was closed. Resuscitory measures similar to those described above sustained life for two hours.

Experience with these two cases led the junior author to the conclusion that if any measure of success was to be attained by the use of norepinephrine, the solution would have to be administered in greater concentration and more rapidly than by the time-consuming procedure of exposing a peripheral vein by cut-down. Thus the suggestion that one milligram of nor-epinephrine base (1 cc. of Levophed) be injected into the ventricle of the presently-reported patient.

Consultation of the literature reveals a mass of contradictory advice as to how such an emergency should be best treated. Stephenson, *et al*,(1), in a review of 1200 cases of cardiac arrest, state that "of the successfully and permanently resuscitated cases, 94% were massaged within four minutes." Dark, *et al.*(2) feel that the "brain cannot be expected to, though it may sometimes, survive more than three minutes of complete anoxia without suffering irreversible

damage." We feel that a considerable portion of our delay in starting cardiac massage was avoidable and cannot agree with Cassels and Elnes(3) that the first two minutes should be utilized in trying to establish that cardiac arrest has really occurred and in draping and disinfecting the chest before incision. Cowan,(4) on the other hand, feels that massage should be employed at once and that no time should be lost in attempting such resuscitory measures as cardiac injections. He feels that such standard procedure as the injection of epinephrine or procaine is useless and that any success achieved by injection is actually due to the stimulus of the needle.

There is considerable literary debate as to the advisability of reaching the heart through a thoracic incision or by means of an abdominal approach. Wexler, *et al.*,(5) give an able defense of the abdominal approach with description of a technic taking advantage of the anatomical construction of the diaphragm. The consensus of opinion favors the thoracic approach. Not only does a thoracic incision offer the advantage of direct visualization and of greater availability for cardiac injection, but it permits compression of the aorta for shunting a larger proportion of aerated blood into the cranium during the course of massage.

Recommended massage rates vary from the widely accepted 40 per minute to 120. Bost,(6) in defending the higher rate, produces experimental evidence that a greater blood flow is thus attained. He admits that fatigue on the part of the operator would not allow for a rate of 120 to be maintained more than a few minutes and suggests a relay team if such is possible.

A stimulus resulting in a vago-vagal reflex is the most common precipitating factor for cardiac arrest. Reid, *et al.*,(7) feel that many cases of arrest arise from stimuli in the respiratory tree. Effective stimuli may involve the bronchi, trachea, and nasopharanx; the pleura, and the pulmonary vessels. Pleural or bronchial irritation travels over a route ending in the specific tissue of the heart, while stretching of the pulmonary vessels results in contraction of the cardiac vessels. Hitschler(8) records arrest from spraying the throat with cocaine, or even with water. Sencindiver(9) states that hypoxia sensitizes the carotid sinus, stimulating a reflex inhibition of cardiac activity. Reid(7) points out that there are no vagal fibers in the ventricles, and that cardiac arrest could not occur in a healthy, unanesthetized human. He states, however, that cardiac disease involving the destruction of specific tissue in the ventricles or depression of this tissue by anesthetic agents may abet cardiac arrest if vagal stimulation simultaneously depresses auricular specific tissue. Thus the ventricles are hindered in taking over their own automaticity. Reid states bluntly that almost all cases of cardiac arrest due to instrumentation could be avoided by depressing vago-vagal reflexes through adequate atropinization.

Wiggers,(10) in a discussion of the use of 110-volt A.C. current for abolishment of ventricular fibrillation, states that the shocks should be preceeded by cardiac massage. Such massage increases coronary blood flow, allowing adequate oxygenation of the muscle fibers. This tends to eliminate weak, post-shock, coordinated contractions usually resulting if fibrillation has persisted for more than two minutes in the unaided heart.

Ehlert(11) argues that arrest may occasionally be eliminated by forcibly expanding the lungs with oxygen. The intrathoracic veins expand on filling the chest with air, allowing an intake of blood from the arms, head, and abdomen. A back-flow of the blood during expiration is prevented by the valves of the veins and those of the heart itself, so that the slowly beginning blood current will flow in the right direction.

Nor-epinephrine as an adjunct for cardiac arrest has not been reported in the literature. Nathanson and Miller,(12) working on unatropinized patients, found that the drug had a definite pressor action but that the heart rate increased only a few beats per minute as a result of its use. They felt that little or no resultant cardiac stimulus occurred and that the drug would not only be useless in cardiac arrest but that it would tend to produce fibrillation in the normal heart. Tainter and Lands(13) state that a definite cardio-acceleratory mechanism may be traced to the drug but that it is obscured by vagal brachycardia induced by the increase in blood pressure. They thus recommend atropination for the patient who is to receive nor-epinephrine. Goldberg, *et al.*,(14) show that in the vagotomized dog nor-epinephrine produces cardiac contractile force increments and tachycardia similar to those of epinephrine, although only one microgram of nor-epinephrine was needed to approximate the re-

sults obtained by two micrograms of epinephrine.

Some criticism might be leveled at our use of a comparatively massive dose of such a relatively new drug as nor-epinephrine. In defense, it should be noted that heroic measures were called for as the patient was *in extremis.* The result was immediate and dramatic. It is likely that the patient was poorly atropinized at the time of arrest. If cardiac arrest does occur in the adequately atropinized patient (see above), it is suggested that a dose of nor-epinephrine one-third to one-half the above be used.

In conclusion it may be stated from the evidence afforded by the literature that it is not defensible to stop short of cardiac massage in attempts to resuscitate the case of cardiac arrest. Not only is it incumbent on the surgeon to have the courage to employ such measures, but there is little doubt that in the near future medico-legal consequences will attend his failure to do so. Time is of the essence, and the heart should be exposed as soon as possible after the pulse has ceased. No more than a minute should be lost in such resuscitory methods as needling the heart or inflating the lungs. It is felt that intracardiac injections of nor-epinephrine may be a valuable adjunct in the treatment of these cases. In view of the doubtful results obtained from the use of epinephrine, it is suggested that nor-epinephrine be tried in its place.

LITERATURE CITED

1. Stephenson, Hugh E., Jr., L. Corson Reid, and J. William Hinton: Some common denominators in 1200 cases of cardiac arrest, Annals of Surgery, 137: 731, 1953.

2. Dark, J. F., T. Dinsdale, A. N. Guthkelch, and L. P. Lassman: Acute circulatory failure during surgical operations, British Medical Journal, 2: 533, 1952.

3. Cassels, W. H., and Nyla R. Elnes: Cardiac arrest during anesthesia, California Medicine, 76: 130, 1952.

4. Cowan, K. A.: The management of primary cardiac arrest under anesthesia, Current researches in anesthesia and analgesia, 32: 286, 1953.

5. Wexler, David J., Fred Bromberg, and Anthony Kohn: An emergency infracostal approach for cardiac arrest, American Journal of Surgery, 86: 29, 1953.

6. Bost, T. C.: Cardiac arrest during anesthesia and surgical operations, North Carolina Medical Journal, 12: 579, 1951.

7. Reid, L. Corson, Hugh E. Stephenson, and William J. Hinton: Cardiac arrest, A. M. A. Archives of surgery, 64: 409, 1952.

8. Hitschler, William J.: Cardiac arrest and resuscitation from viewpoint of otolaryngologist, A. M. A. Archieves of Otolaryngology, 56: 416, 1952.

9. Sencindiver, Paige Victor: Sudden cardiac arrest, Journal of the student American Medical Association, 1: 21, 1952.

10. Wiggers, Carl J.: The interpretation and treatment of heart failure during anesthesia and operation, Ohio State medical Journal, 45: 1169, 1949.

11. Ehlert, Hermann: Cardiac arrest and its treatment, Langenbeck's Archiv fur klinische Chirurgie and Deutsch Zeitschrift fur Chirurgie, 265: 296, 1950.

12. Nathanson, Morris H. and Harold Miller: The action of nor-epinephrine and of epinephrine on the ventricular rate of heart block, American Heart Journal, 40: 374, 1950.

13. Tainter, M. L., and A. M. Lands: Certain actions of sympathomimetic amines on the heart, New York State Journal of Medicine, 53: 1433, 1953.

14. Goldberg, Leon I., Marion deV. Cotten, Thomas D. Darby and Edgar V. Howell: Comparative heart contractile force effects of equipressor doses of several sympathomimetic amines, Jour. Pharmacol. and Exper. Therap., 108: 177, 1953.

PHOENIX *Clinical* CLUB

The Case History in this discussion is selected from the Case Records of the Massachusetts General Hospital, and reprinted from the New England Journal of Medicine. The discussant under Differential Diagnosis is a member of the staff of the Massachusetts General Hospital. The other discussants are members of the Phoenix Clinical Club.

MASSACHUSETTS GENERAL HOSPITAL

PRESENTATION OF CASE

FIRST ADMISSION. A forty-one-year-old single caretaker entered the hospital because of a bad taste in the mouth and epigastric pain.

About fourteen months previously the patient noted the sudden onset of a "funny taste" in the mouth associated with a brown-white discoloration of the tongue and a feeling of weakness. He stopped work for two days. After this, he was well until seven months before entry, when a cold and a nonproductive cough developed. At the same time, the bad taste, which had the character of "burning rags," recurred. He also began to have nonradiating, sharp epigastric pain which had no relation to food intake, lasted about two hours and occurred every two or three days. All these symptoms continued up to the time of admission. His appetite was poor. He felt weak and tired and had been out of work for the last seven months. He was seen at the onset by his physician, who found the blood pressure to be "over 200." Examination five months before admission revealed that the nonprotein nitrogen was 88 mg. and the hemoglobin 11.3 gm. per 100 cc. The urine contained albumin, with 2 to 4 red cells and 5 to 10 white cells per high-power field in the sediment. He had lost 25 pounds in the year before entry. He slept eleven hours every night instead of the six to seven hours required a year before admission. Nocturia (two times) occurred during the few years before entry, increasing to six times and being associated with difficulty in starting the stream for the seven months before admission.

He had had scarlet fever at the age of five. He had had a positive Wassermann test at some time in the past for which he had been treated. There was no history of hematuria, leg edema, puffiness of the face, low back-pain or headache. Bowel movements were normal. He had no known heart disease.

Physical examination showed a thin, pale and somewhat confused man. The ocular fundi were normal. The lungs were clear. The heart was not enlarged and had a normal rhythm. There was a Grade 2 systolic murmur at the apex and a split second sound at the left sternal border. The abdomen was normal. Rectal examination revealed large external hemorrhoids; the prostate was not enlarged but was slightly tender.

The temperature was 98.4°F., the pulse 80, and the respirations 18. The blood pressure was 180 systolic, 120 diastolic.

The urine had a specific gravity of 1.010 and gave a test for albumin; the sediment contained 5 red cells, 50 white cells and occasional granular and red-cell casts per high-power field. Examination of the blood disclosed a hemoglobin of 11.5 gm. per 100 cc and a white-cell count of 7400, with 66 per cent neutrophils, 30 per cent lymphocytes and 4 per cent monocytes. The red cells were of the normochromic, normocytic type. The serum non-protein nitrogen was 170 mg., the calcium 6.4 mg., and the phosphorus 7.2 mg. per 100 cc.; the sodium was 133 milliequiv., the potassium 4.2 milliequiv., the chloride 103 milliequiv., and the carbon dioxide 18.6 milliequiv., per liter. The blood pH was 7.28. A blood Hinton test was negative. The twenty-four-hour urine sodium was 26 milliequiv. per liter. A phenolsulfonephthalein test showed less than 20 per cent excretion in two hours. A stool guaiac test was negative. A urine culture grew rare colonies of Staphylococcus albus. The spinal fluid was normal, with a negative serologic test. An electrocardiogram revealed a normal sinus rhythm, a PR interval of 0.12 to 0.13 second, a QRS interval of 0.08 second, a QT interval of 0.44 second and a normal axis. The T waves were inverted in Leads 1,2,3, V5 and V6, low and upright in Leads AVR and AVL, diphasic in Leads AVF and V4 and tall and peaked, with slightly elevated ST segments, in Leads V1, V2, and V3. A roentgenogram of the chest showed clear lung fields; the heart was not enlarged, but the con-

tour of the left ventricle appeared prominent and there was a suggestion of enlargement of the left atrium. A plain film of the abdomen demonstrated kidney shadows that were normal in size and shape; there were no opaque calculi in the abdomen.

In the hospital a sore throat developed, with edema of the uvula; throat culture grew abundant alpha-hemolytic streptococci, Staph. albus and a few colonies of STAPH. aureus and diphtheroids. This was treated with crystacillin and cleared after two days. The patient was treated with a diet of 60 gm. of protein without added salt, gelucil, sodium bicarbonate and Amphojel. He was discharged two weeks later with only slight improvement, the non-protein nitrogen being 150 mg. per 100 cc. at that time. The highest urine specific gravity was 1.010, and all specimens showed xx to xxx tests for albumin; most sediments contained 2 to 3 red cells, 5 white cells and occasional granular casts per high-power field.

Final admission (three months later). One and a half months after discharge, the patient began to have leg edema, and was again referred to this hospital, where he was followed in the out-patient clinic. There was no dyspnea or chest pain. Examination revealed distended neck veins, a liver edge palpable 2 fingerbreadths below the costal margin and xxx edema of the legs. The patient was digitalized. About ten days later, a sharp pain developed in the right groin and testicle, which became swollen. The white-cell count was normal. A biopsy of the right epididymis was performed one week later, pathological examination of which revealed chronic inflammation and fibrosis. At about the same time, a cystoscopy showed a moderately trabeculated bladder mucosa; bladder capacity was 350 cc and sensation was normal. A retrograde pyelogram demonstrated good filling of the left renal pelvis, calyxes and ureter; on the right side there were fewer calyxes, considered to be possibly due to a double pelvis or to a cyst in the upper pole. The intravenous indigo carmine appeared in dilute concentration in three minutes from the right kidney; there was none from the left. The patient was followed in the clinic and complained of feeling dizzy and sleepy at times; his legs went to sleep frequently, and the bad taste persisted. The day before admission he began to have sharp pain in the precordium and both shoulders. When he was examined in the Emergency Ward, a convulsion, lasting five to ten minutes occurred and was followed by a postictal coma.

On physical examination the patient was semistuperous but responded to questioning. The respirations were deep at a rate of 8 per minute. The neck veins were prominent and pulsating. The lungs were clear except for rhonchi. There was a loud to-and-fro friction rub all over the precordium. The liver and spleen were not palpable. There was no peripheral edema.

There temperature was 97.4°F., the pulse 85, and the respirations 8. The blood pressure was 140 systolic, 90 diastolic.

The urine had a specific gravity of 1.010 and gave a xx test for albumin; the sediment contained 8 to 12 white cells, occasional red cells and rare hyaline casts per high-power field. The blood hemoglobin was 10.5 gm. per 100 cc.; the sodium was 131 milliequiv., the chloride 96 milliequiv., the potassium 4.5 milliequiv., and the carbon dioxide 10 milliequiv. per liter. The pH was 7.12. The urine culture revealed abundant colonies of Bacillus pyocyaneus (Pseudomonas aeruginosa) overgrowing nonhemolytic streptococci. A roentgenogram of the chest showed that the lungs were clear, but the heart was larger than it had been on the previous examination.

The patient was treated with calcium gluconate, sodium lactate and fluid intravenously, but he remained drowsy and stuperous. On the fifth day, he suddenly had two generalized convulsions and died shortly after the second attack.

DR. FRANK J. MILLOY

This 41 year old single caretaker entered the hospital complaining of epigastric pain and a bad taste in the mouth. His first symptoms occured 14 months before entrance and was mostly the bad taste and weakness and he was off work 2 days. Then 7 months later he had an acute cold and these same symptoms reoccured accompanied by sharp epigastric pain. He became weak and tired and lost his appetite and 25 pounds. Four months prior to entrance his blood pressure was 200, N.P.N. 88 mg. and the urine contained albumin, red cells, and white cells. His symptoms continued and he became progressively worse. He required eleven hours rest at night instead of 6 and 7 before

his illness began, due to weakness and exhaustion.

When he entered the hospital his N.P.N. was 170 mg. His calcium was decreased and his phosphorus increased. The CO2 combining power was 18 milliequiv. per liter. This is the picture of impending uremia. He was hospitalized for 2 weeks during which time he had an acute sore throat and was given penicillin. His N.P.N. dropped to 150 mg. during the hospital regime. Six weeks after discharge he began to have cardiac decompensation. He was under observation in the out patient clinic where he was digitalized. Six weeks later or 3 months after the first discharge he was re-admitted. He was semi-stuperous and having convulsions. His N.P.N. had risen to 240 mg. His calcium had dropped lower and his phosphorus had gone higher. His CO2 had dropped to 10 millicquiv. per liter. The normal CO2 is 24 to 28 milliequiv.

This represents an advanced stage of renal failure and we are immediately confronted with the problem of whether the patient has a primary hypertension with arteriosclertic nephritis or a disseminated glomerular nephritis.

There are some important unknown facts in the history. (1) Was there a family history of hypertensive cardiovascular disease? (2) Did he have any attacks of chills and fever? He had scarlet fever at 5 but we do not know whether he had any complications. This would point to the disseminated glomerular type. (3) Indigo carmine was not excreted by the left kidney. Did he have unilateral renal disease and if so did he ever have an accident in which one kidney was injured and developed the Goldblatt type of hypertension?

Arteriosclertic nephritis is much more common than the glomerular form. Arteriosclertic nephritis is much more of a generalized systemic disease and patients suffer from headaches, retinopathy, and are more liable to have vascular accidents or die from acute congestive heart failure. The glomerular type is more liable to develop uremic coma and death. The ocular fundi were normal at the time of the first admission. This is a little unusual in either type of nephritis. It would be helpful to know if any retinal changes had developed by the time of the final admission.

The important point to be decided in this case may be whether the renal disease was primary or secondary. It is stated that the prostate was normal. Every urine examination showed red cells and white cells in variable number. Albumin was always present. Only occasional granular or hyaline casts were seen. Prior to the first admission the patient had nocturia from 2 to 6 times. When his illness became permanent it was ushered in by an acute cold. During the first period in the hospital he had an acute sore throat. Staphlococci and streptococci were present on the throat culture. A culture of the urine showed staphlococci albus. Of course this could have been a contamination. At the time of the second admission the urine culture revealed both pyocyaneus and streptococci. Nothing is said about blood cultures in the protocol but if it should develop that a positive blood culture was obtained this whole picture could be explained on a double sub-acute ascending pyelonephritis. In such a case the commonest offending organism is the colon bacillus. In a sub-acute pyelonephritis ocular changes may not occur until the terminal stage. Hypertension may be a latent development. Altho this patient had it 8 months before the terminal stage. The occurence of chills and fever would be helpful in this diagnosis. Such acutely ill patients are usually given antibiotics and hormones now days, however, and the typical febrile courses are much altered.

Normal sized kidneys as revealed in the flat x-rays of the abdomen rules out polycystic kidneys. I think the patient should have been given a benzodioxane test for the possibility of phochromocytoma.

The patient died from uremia.

So I think the anatomical changes will show:

1. Malignant hypertension with nephrosclerosis.
2. Chronic and acute pyelonephritis.
3. Hypertrophy and dilitation of the left ventricle.
4. Pericarditis with effusion which frequently occurs in uremia and would be the cause of the pericardial friction rub.
5. If he had a primary nephritis which I doubt, I think it was more likely the arteriosclertic type, for 3 reasons:
 (a) The arteriosclerotic type is much the commoner type.
 (b) The absence of a history of any pro-

longed or severe febrile disease, except scarlet fever at 5 years.

(c) The fact that a 41 year old man may have two conditions: The early stages of malignant hypertension and the development of an ascending urinary infection, causing the pyelonephritis.

A terminal x-ray showed the lungs clear, but the heart was larger than on previous examinations. This could have been due to the pericardial effusion. But I believe something else happened to the heart in the last few days. He had sharp pains in the precordium. The white count went up to 29,000. A pericardial rub developed and the blood pressure dropped to 140. So I think the post-mortem may show a coronary occlusion with myocardial infarction.

DIFFERENTIAL DIAGNOSIS

Dr. Charles H. DuToit: May I see the x-ray film first?

Dr. Stanley M. Wyman: The original films of the chest show enlargement in the region of the left ventricle and a rather tortuous aorta. The questionable prominence of the left atrium as seen here, I think, is minimal and may be nonexistent. The lungs themselves are not remarkable. The retrograde pyelogram demonstrates slight widening of the ureters and perhaps a little blunting of the calyxes although this is very minimal. The question of a cyst in the upper pole of the right kidney is difficult to substantiate from the films. The calyxes are not as well filled on the right side, and I should go no further than that. I cannot visualize the kidneys themselves sufficiently well to say whether they are normal in size and shape; the calyceal systems of the kidneys, however, seem smaller than usual if anything rather than enlarged.

Dr. Walter Bauer: You have no films that give one a better idea of the size of the kidneys than these?

Dr. Wyman: No; I went through the whole set of films and could find none that outlined the kidneys adequately. There was so much material in the bowel, the patient being obviously very sick from the beginning, that he could not be well prepared for the examination.

Dr. DuToit: In summary this relatively young man, forty-one years of age, had symptoms possibly for fourteen months but definitely for seven months, at which time he was discovered to have hypertension and enough renal insufficiency to cause a considerable degree of azotemia. The disease then led to death in uremia about ten or eleven months after the condition was first discovered. I do not believe that anything in the clinical course subsequent to his admission to the hospital represents more than the signs, symptoms and complications of uremia itself.

Looking for clues to the diagnosis of the disease that caused the ultimate kidney failure, I am impressed by the fact that early in the history of the illness signs suggesting mechanical difficulty in the lower urinary tract appeared. Whether this difficulty in boiding was present at the onset of the disease or whether it came on subsequently is hard to decide. The decision depends on how much weight one places on the story that urinary frequency up to two times a night had been present for several years and on the transient episode fourteen months before admission. At any rate, close to the onset of the symptoms, it was noted that he had considerable difficulty in starting the stream and marked increase of nocturia. Apparently, the symptoms of lower-urinary-tract obstruction impressed the service because cystoscopic examination and retrograde pyelograms were performed in a critically ill patient.

I think I have to consider strongly some type of lower-urinary-tract obstruction predisposing to pyelonephritis, which itself can lead to hypertension and can impair renal function further through the development of the changes of nephrosclerosis. I cannot attribute the picture to back pressure alone — there was no evidence of a hydroureter or any degree of hydronephrosis. However, I think it is well established, even by animal experiments, that if the dynamics of urination are altered the kidneys are likely to develop infection. It is true that one cannot make a good case for kidney infection from the character of the urinary sediment. On all but one examination the number of white cells found was not too impressive. Of course, during the last admission after the cystoscopy, a high white-cell count and a considerable number of bacteria were noted in the urine; this, however, can only be positively interpreted as showing a recent cute renal infection. It does not help with the diagnosis of the earlier condition. It is well known that chronic pyelonephritis, after it has persisted for a certain period, will

give relatively little evidence of an inflammatory lesion in the urinary sediment. The signs of infection such as an increase in the number of white cells and definite organisms are not consistently present in chronic pyelonephritis.

One question that I have to answer is, What type of mechanical difficulty at the bladder neck or below would be logical in a forty-year-old man? Such a lesion would have to be of a type that would not be apparent on cystoscopic examination. Such conditions as ulcers and tumors of the bladder would probably have been seen at the time the examination was carried out. A patient of forty-one is rather old for the congenital causes of obstruction such as congenital valves of the urethra and rather young for the usual causes such as denign hypertrophy and carcinoma of the prostate. I do not think the positive Wassermann test had much bearing on the case. There was no evidence from the spinal-fluid examination to suggest tabetic bladder and the cystoscopy did not suggest such a possibility.

I should consider most prominently two things, a stricture of the urethra, or a lesion in the medianbar region of the prostate. With stricture of the urethra one would expect a longer history, and it would have been detected at the time the manipulation of the urethra was carried out. This leaves as the only possibility a lesion in the median-bar region of the prostate, which tends to occur in older persons but is by no means unusual at this age. I believe some pathologists argue about its relation to other forms of benign hypertrophy of the prostate. I think in some cases inflammatory lesions have been suspected as underlying the development of such a lesion in this anatomic region of the bladder neck. Nothing suggested carcinoma of the prostate. I should expect that with carcinoma more would have been noted on rectal examination. The films show nothing abnormal in the spine or pelvis. There is no report of an acid phosphatase level.

The epididymitis that developed in the course of this disease is not an infrequent complication of mechanical difficulty at the bladder neck. Also, one might speculate about the relation of this type of lesion to past or present infection in the prostate and seminal vesicles. The possibility should be mentioned that the symptoms in the lower urinary tract were subsequent to primary disease of the kidneys, tuberculosis being the disease that comes to mind. It seems to me that there is relatively little else to suggest tuberculosis, which because it destroys the anatomy of the kidney, would look quite different in the pyelogram. Also, one would expect different findings on cystoscopy than those reported. I might disregard the mechanical problem altogether by simply saying that it was an incidental finding or perhaps arose through increase in the daily urine volume, but I think that would be a flimsy explanation.

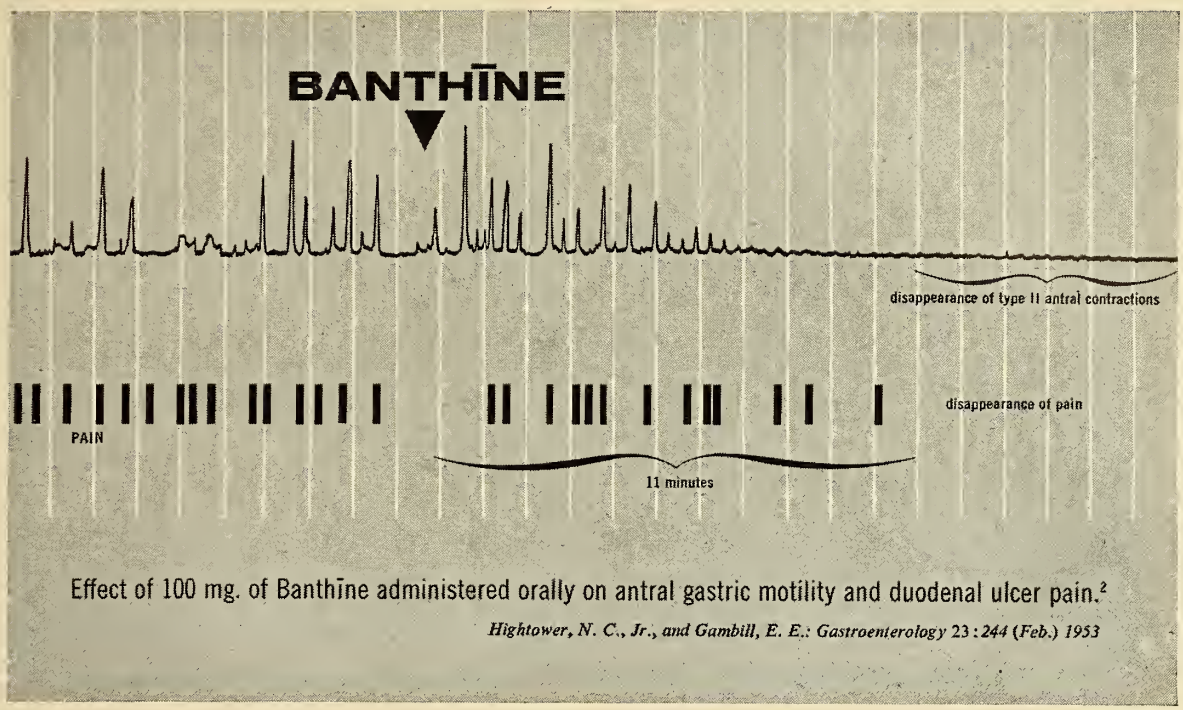
That brings the discussion to chronic glomerulonephritis, which is suggested by several features of the case. One is the possible exacerbating effect of upper respiratory infections, which were described on two occasions. It would be most helpful if I knew the size of the kidneys, for if they were markedly contracted I should favor a diagnosis of chronic glomerulonephritis. The notation that on one occasion red-cell casts were found in the urine is quite interesting; red-cell casts generally imply a lesion high in the nephron and are much more characteristic of acute nephritis or other diseases involving the glomerular tufts than of pyelonephritis or pressure nephrosis.

The question will come up, too, whether this could have been the end result of hypertensive heart disease alone. However, the heart was not greatly enlarged when the patient was first seen, and there were no eye-ground changes so that I may assume that severe hypertension had not been present very long.

I might mention other rare kidney diseases such as polyarteritis nodosa. Polyarteritis nodosa not infrequently causes infarcts of the testicle that may also appear to involve the epididymis. I do not think I am justified in carrying this possibility too far in the absence of other symptoms suggesting this diagnosis.

Other conditions such as amyloid disease I do not think have to be seriously considered. There is not enough to go on except for the x-ray report of one questionable cyst to make a diagnosis of polycystic kidneys. The kidneys were not palpable; there was nothing in the other kidney that suggested polycystic disease.

I have not related the abdominal pain to the kidney disease. I cannot think of a good explanation for the pain. It seems to have been too persistent to be explained by the gastritis of



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Hightower, N. C., Jr., and Gambill, E. E.: Gastroenterology 23:244 (Feb.) 1953

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uremia. The enteric involvement that one sees in the mucosa of the stomach and intestines in uremia is usually a terminal affair of relatively short duration. I wonder whether it could have represented the development of infection in the kidney. I do not know how else to bring it in.

I shall give as my first diagnosis chronic pyelonephritis with a certain amount of nephrosclerotic change. I should expect that the patient had a median-bar hypertrophy of the prostate and that terminally he had some superimposed acute pyelonephritis. My second choice is chronic glomerulonephritis. I shall throw in the possibility of a peptic ulcer or some other lesion to explain the epigastric pain.

Dr. Bauer: May we have the history that pertains to familial disease?

Dr. Benjamin Castleman: The patient's father is alive, is seventy-seven years old and has heart trouble. Two brothers died of a heart attack at the ages of twenty-two and forty-two; two others are living and well.

Dr. Wyman: Dr. DuToit, do you think the change in the calyceal system of the kidneys was minimal if the patient had severe chronic pyelonephritis? Is this not more in keeping with glomerulonephritis?

Dr. DuToit: I think it is possible for minimal lower-urinary-tract obstruction to damage the kidney by predisposing it to repeated infection.

Dr. Bauer: Do you think the patient had so much trouble with the bladder at the ureterovesical junction?

Dr. DuToit: He had a trabeculated bladder, not enough alone to cause renal damage but perhaps enough to predispose the patient to infection.

Dr. Bauer: Did he have polycystic disease of the kidney? He died at the age of forty-one.

Dr. Alexander Leaf: Those of us who followed this patient in the renal clinic were not so much impressed with the evidence for urinary-tract obstruction. Our impression was that this was most probably chronic glomerulonephritis at this stage are well appreciated. The reason for the pyelogram was that the epididymitis that developed on examination seemed most consistent with infectious epididymitis perhaps tuberculous in origin. There was also in favor of tuberculosis the fact that the patient worked in a tuberculosis sanatorium for a number of years. The retrograde pyelogram was to rule out the possibility of tuberculous disease of the kidney.

Dr. Farache Maloof: When the patient was on the service, our diagnosis was chronic renal disease with uremia. The question arose at that time whether pyelography or cystoscopy should be done. We finally decided not to do anything in view of the potential hazards from these procedures in this sort of patient specially since we thought that nothing could be gained.

CLINICAL DIAGNOSIS

Chronic glomerulonephritis.
Uremic pericarditis.
Chronic pyelonephritis.
?Double renal pelvis, right

DR. CHARLES H. DuTOIT'S DIAGNOSIS

Chronic pyelonephritis, with nephrosclerosis.
Median-bar prostate hypertrophy.
Acute pyelonephritis.
?Chronic glomerulonephritis.

ANATOMICAL DIAGNOSIS

Acute and Chronic pyelonephritis.
Pericarditis, uremic.
Pulmonary edema, severe.
Bone-marrow embolism of lung.

PATHOLOGICAL DISCUSSION

Dr. Castleman: At the time of autopsy we found an enlarged heart — it weighed 600 gm. - and a pericarditis of the uremic type with 200 cc. of fluid and fibrin in the pericardial cavity. The lungs showed severe edema and no pneumonia. The kidneys were about half the normal size, weighing 180 gm., and were uniform and coarsely granular. The external appearance was that seen in chronic glomerulonephritis except fore one finding that did not fit; numerous small cysts scattered over the surface between which a good deal of renal tissue still remained. When the kidneys were cut, many of the cysts were fairly large, one measuring up to 2 cm. in diameter on the right. These cysts as a rule are not seen in a chronic glomerulonephritis. The renal markings were almost completely obliterated. The ureters were not dilated, and the bladder appeared to be merely congested. There was no median-bar lesion and no enlargement of the prostate. The right epididymis was a little scarred, but there was no evidence of an acute infection; the testes were normal.

The microscopical sections of the kidneys showed a clear-cut pyelonephritis; there was no

glomerulonephritis. The pyelonephritis was both old and recent. There were polymorphonuclear neutrophils and colloid casts in the tubules, necrosis of the tubular epithelium and acute and chronic changes in the tufts, the acute changes being of the type that is seen with a pyelonephritis. The interstitial tissue was densely infiltrated with polymorphonuclear leukocytes and there was a large amount of scar tissue as well. We have no explanation for the etiology of this pyelonephritis. It involved both sides equally, and I believe there was a blood-stream infection in the past. The vascular changes in the kidney were quite prominent, but no evidence of polyarteritis was noted. The cysts were probably the result rather than the cause of the pyelonephritis. They did not appear to be the type seen in congenital cystic disease.

An incidental finding in the lungs was of great interest. The pulmonary arteries contained bone-marrow emboli composed of fat and myeloid cells. This is not fat embolism; it is actually the bone marrow itself acting as an embolus. The cause of bone-marrow is almost always a bone fracture and usually a major fracture; but often there is no evidence of a definite fracture, and Rappaport et al. believe that violent muscular contractions, such as may occur with a convulsion, may so injure a vertebra that cancellous bone marrow may be forced into the contiguous sinusoidal veins, becoming emboli. Bone-marrow embolism has also been observed in the lungs of patients who have had convulsions associated with tetanus and shock treatment in whom there was no evidence of an injury grossly. This patient had two severe convulsions just before death, and the bone marrow looked quite viable so that the emboli were not present more than a few hours. I do not believe they had anything to do with the cause of death although in a few reported cases they have extensively involved the lungs; in the absence of another cause, dath has ben attributed to these bone-marrow emboli.

POST OFFICE URGES MORE CAREFUL BLOOD PACKAGING

An assistant postmaster in Chicago phoned my office recently, says Dr. Geo. F. Lull, secretary of the AMA in a recent newsletter, and complained that many doctors are mailing blood specimens in glass vials placed in metal screw-topped cardboard tubes to private and governmental laboratories and, because of carelessness in screwing the tops on securely, the vials slip from the tubes, are broken, and the blood stains other mail. He pointed out one important fact from the doctor's viewpoint; if the postal employee re-inserts the vials in the tubes, who knows whose blood goes into whose tube?

The assistant postmaster said the same trouble exists in other postal centers and urged us to publicize what he called ""this dangerous nuisance."

He urged doctors to place an adhesive strip (not scotch tape) across the metal top and down the sides of the container. This he said, will prevent the insecurely screwed tops from coming off.

ANNUAL ASSEMBLY IN OTOLARYNGOLOGY

The Department of Otolaryngology, University of Illinois College of Medicine, announces its Annual Assembly in Otolaryngology from September 6 to 11, 1954. The entire week will be devoted to surgical anatomy and cadaver dissection of the head and neck, and histopathology of the ear, nose and throat. The Assembly will be under the direction of Maurice F. Snitman, M.D.

Registration will be limited. For information write to the Department of Otolaryngology, University of Illinois College of Medicine, 1853 West Polk Street, Chicago 12, Illinois.

NOTICE

ALL CONTRIBUTORS OF ARIZONA MEDICINE SHOULD HAVE THEIR MATERIAL IN THE JOURNAL OFFICE NOT LATER THAN THE 10th OF THE MONTH PRIOR TO PUBLICATION IN ORDER TO HAVE ARIZONA MEDICINE REACH ITS READERS ON OR BEFORE THE 10th OF THE MONTH

Material arriving after that date will be published the following month.

THE *President's* PAGE

ARIZONA MEDICAL ASSOCIATION

THE ROUTINE WORK OF YOUR SOCIETY IS ACCOMPLISHED BY THE EFFICIENT STAFF IN THE OFFICE OF THE EXECUTIVE SECRETARY. THERE ARE, HOWEVER, A CONSIDERABLE NUMBER OF PROBLEMS ARISING IN THE COURSE OF THIS BUSINESS THAT REQUIRE WORK BY COMMITTEES, AND IT IS HERE THAT THE VOLUNTEER WORKERS IN THE ASSOCIATION GIVE MUCH OF THEIR TIME AND EFFORT IN THE SOLUTION OF THESE PROBLEMS. THIS EFFORT, THEREFORE, REQUIRES A NUMBER OF COMMITTEE WORKERS AND THE HOPE OF AN ACTIVE ASSOCIATION IS TO HAVE MORE AND MORE MEMBERS OF THE SOCIETY ACT IN COMMITTEE FUNCTIONS.

ACCOMPLISHING THE ROUTINE WORK OF AN ASSOCIATION IS, HOWEVER, NOT ENOUGH. NEW SITUATIONS ARISE AND MORE NEW OPPORTUNITIES APPEAR TO BENEFIT THE MEMBERS OF THE ASSOCIATION AND THESE MUST BE ACTIVATED. WE ARE WORKING AT THE PRESENT TIME WITH LEADERS OF OTHER ASSOCIATIONS IN THE STATE TO SEE IF WE CAN WORK OUT SOME PROGRAM TO BENEFIT MEMBERS OF THIS ASSOCIATION. WE HOPE TO BE ABLE TO PRESENT THESE AT SOME FUTURE DATE.

OSCAR W. THOENY, M.D.,

President, Arizona Medical Association

Editorial

ARIZONA MEDICINE
Journal of
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The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.
2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. (See MEDICAL WRITING by Morris Fishbein.)
3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.
4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.
5. Submit manuscript typewritten and double-spaced.
6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.

The Editor is always ready, willing, and happy to help in any way possible.

ORCHIDS ARE IN ORDER

ANOTHER Annual Meeting has come and gone and to borrow a custom of a well-known radio commentator we can pass out a lot of "orchids".

Chandler was tops as the host city. We felt most welcome. The San Marcos Hotel went all out to arrange in excellent fashions all the complicated schedules and to meet very efficiently all the unusual and irregular physical requirements. The beautiful surroundings were inspirational.

The Scientific Programs were outstanding. The guest speakers were expected of course, to be pleasantly and interestingly informative — and they were. The "home talent" speakers merit no apologies — only praise. We were indeed proud of them. Papers of most of these speakers will be published in this Journal in months to come.

The Scientific Exhibits were well set up, well attended, and worth while. The informal cordiality of all the exhibitors was delightful and we felt certain that we were among friends.

The attitude and cooperation of the press were above reproach. The newspapers of the state were very generous with space and the news items were, accurate, comprehensive and well illustrated. We noted no fact twisting for headlines sake. They deserve and have our sincere appreciation.

Business Sessions of the Association were orderly, unusually non-controversial, and very effective. The hard and conscientious work of the various reference committees contributed much toward this result.

Attendance was interesting. Of a total state membership of approximately eight hundred and thirty-three, two hundred and fifty-nine or thirty-one per cent attended. Besides there were eighty-six non-members working a total attendance of three hundred and thirty-five.

Certainly the program committee, arrangements committee, the executive secretary, and many others deserve "orchids". And for those unnamed persons who like the relays in a pipe-organ are seldom seen and never heard, but who nevertheless work faithfully, while the pipes get all the glory, we say "Orchids to you too."

BOOK REVIEW

CURE YOUR NERVES YOURSELF by Louis E. Bisch, M.D., Ph.D.

To a reader who has never heretofore had even a glancing acquaintance with literature written by psychiatrists for public therapy this new issue from the gushing pen of Dr. Bisch is an eye-opener. It is conceivable that this latest is a compendium of the contents of six prior books addressed to shy, neurotic and tense citizens; certainly it would seem there has been nothing left for an eighth book. Fifteen years' experience producing a syndicated daily column on Health and Psychology has given the author a facility with direct expression, short sentences

and little words together with a complete indifference to repetition. Where repetition seem to have missed the target the punch is delivered in italics and there's at least one punch on every page. In the introduction the reader is advised to peruse one chapter per day and perhaps that would be the best way to absorb the impacts, or roll with them.

The exhortations are enlivened with abundant illustrations from the author's practice. It is apparent early in the text that the well-adjusted female is the one who loves, cherishes, stays at home, breeds the brood and has a good hot meal waiting for the old man when he comes home at the end of a hard day. The reviewer is pleased to report that this thoroughly sound and healthy attitude is not abandoned at any point throughout the 240 pages of the book.

It is safe to say that the book contains not one bit of heresy or subversion. The advice freely showered upon the nervous consumer is good as gold and sound as a berry. Whether or not the advice dispels the shadows and enspirits the reader enough to keep him out of the psychiatrist's consulting room would be less certain than that it was so intended.

Reviewed by Clarence L. Robbins, M.D.

ARIZONA PHYSICIANS ATTENDING THE ANNUAL MEETING OF THE A.M.A. AT SAN FRANCISCO, JUNE 20-25, 1954

Lorenz Anderman, Phoenix; Jerome E. Andes, Needles, Calif.; Sotero Antillion, Tombstone; Robert J. Antos, Phoenix; Joseph Bank, Phoenix; James D. Barger, Phoenix; Harriet S. Baritell, Tucson; Harry A. Barnes, Flagstaff; Thomas H. Bate, Phoenix; Benson Bloom, Tucson; Charles E. Borah, Phoenix; Donald K. Buffmire, Phoenix; Roy E. Burgess, Phoenix; Paul S. Causey, Phoenix; H. R. Chester, Prescott; Robert Z. Cullings, Casa Grande; Robert G. Delph, Chandler; George L. Dixon, Tucson.

Robert F. Easley, Glendale; Albert Eckstein, Phoenix; Frank W. Edel, Phoenix; John M. Edmonds, Ray; George S. Enfield, Phoenix; Orin J. Farness, Tucson; Wesley S. Fee, Tucson; W. C. Flinn, Tucson; Dudley J. Fournier, Phoenix.

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H. B. Lehmberg, Casa Grande; Thomas F. Yeo, Whiteriver, Calif.; Leo L. Lewis, Winslow; C. Clark Leydic, Jr., Tucson; B. M. Lipschultz, Phoenix; George G. McKhann, Phoenix; R. I. McGilvra, Phoenix; William H. Marlowe, Whipple; Glenn H. Mathis, Tucson; Otis B. Miller, Tucson; Frank J. Milloy, Phoenix; Yukio Miyauchi, Glendale.

A. Harry Neffson, Tucson; James T. O'Neil, Casa Grande; Raymond F. Oyler, Tucson; Morris Peitchman, Phoenix; Allyn R. Power, Tucson; Howell Randolph, Phoenix; Wallace A. Reed, Phoenix; Jacob Reichert, Phoenix; Maurice R. Richter, Phoenix; C. Robbins, Tucson; James V. Rose, Phoenix; Milton C. F. Semoff, Tucson; Seymour I. Shapiro, Tucson; William R. Shepard, Prescott.

Selig A. Shevin, Tucson; Henry A. Siegal, Phoenix; Merle E. Smith, Fort Huachuca; Henry J. Stanford, Tucson; Lorel A. Stapley, Jr., Phoenix; Charles E. Starns, Tucson; Robert E. Stevens, Phoenix; Robert H. Stevens, Phoenix; Laddie L. Stolfa, Phoenix; James A. Sutton, Tucson; Stanley S. Tanz, Tucson; C. A. Themes, Tucson; Naugle K. Thomas, Tucson; Alden B. Thompson, Tucson; Richard H. Thurn, Winslow.

Virginia C. Van Metter, Tucson; A. C. Van Ravenswaay, Tucson; James Volpe, Jr., Yuma; Earl W. Wade, Eloy; Eleanor A. Waskow, Phoenix; Joseph Waterman, Yuma; Joy Webster, Phoenix; Herbert D. Welsh, Tucson; Jules L. Whitehill, Tucson; Edwin Wilde, Seattle, Washington; Lewis S. Winter, Phoenix; and James R. Zier, Phoenix.

INVITATION

All Physicians and Radiologists of the State of Arizona

You are cordially invited to attend the first demonstration of a fluoroscopic image intensifier in this state.

It will be shown at a regularly scheduled meeting of the medical and surgical staff of Memorial Hospital, 1250 South Fifth Avenue, Phoenix, Arizona, July 19th, 1954, 8:00 P.M.

Dr. Douglas D. Gain and Dr. Ernest Price will be in charge of this demonstration. Interesting cases will be presented, with Dr. Gain as moderator.

TOPICS OF *Current Medical* INTEREST

RX., DX., AND DRS.

By Guillermo Osler, M. D.

MILLER of Ann Arbor warns us of a certain medical doldrum. We cannot accept a low death-rate as "the irreducible minimum" . . . He refers to MATERNAL MORTALITY, and quotes Minnesota figures to prove the point. The rate in 1941 was 2 per 1,000 live births, and the hope was voiced that in 10 years an absolute low of 1 per 1,000 might be reached. . . . The rate six years later had already reached 0.6, and had gone down to 0.3 by 1951 . . . Arizona can work to lower its infant and maternal rates without fear of being too low . . . To make a pun, (and to deny all we have learned at 'scrabble'), complacency has no place.

The especially good topical effect of cortisone for certain skin lesions is apparently matched by a Philidelphia report of Silcox' who finds that more than 70% of patients with seasonal allergic rhinitis are relieved by a NASAL (HYDRO) CORTISONE SPRAY . . . Over 50% of the nasal polyps shrank pro tem., and there were no side effects.

A Hench survey of his CORTISONE results in 216 cases of RHEUMATOID ARTHRITIS over a 3 year period shows that they are only half perfect, but 51% with "marked" or "very marked" relief is very markedly good. Hydro-cortisone (compound F) has the same effects but is more potent per mg. . . . Kammerer and Cecil suggest that cortisone be used chiefly for fulminating juvenile cases, for aged cases which have begun late, and for ankylosing spondylitis. X-ray therapy may also be used in the third group I'll bet that in this day and age it is hard to keep cortisone away from ANY kind of arthritis as it is to keep food from a fat person.

DOUBLE TALK knows no national boundaries. Johnstone of Australia suggests that the use of ANDROGENS IN FRIGIDITY "may be justified by the fact that combined efforts of attack summate their benefit with synergic effect" . . . This means you may use it, and charge for it, if you keep your fingers crossed.

Are you 'with' the obscure but important STRESS REACTION of selye? You should be, and the essentials can be put in a paragraph . . . Any agent which disturbs a large number of body cells may produce a stress reaction. Heavy infections, big burns, strong medicines, great heat or cold, and strong emotion may provide such an insult. They not only have injurious local effects but generalized, systemic, non-specific reactions . . . The attempt of the body to react is called the G.S.A., or GENERAL ADAPTATION SYNDROME, which can be divided into 3 stages,— 1. The ALARM REACTION shows some degree of shock, lowered temp., rise and fall of the blood sugar, depression of the nervous system, and overwork of the adrenalin and pituitary glands. Next comes No. 2. A resistance reaction, in which there is a tendency to reversal of the harmful changes, and a resistance to the insulting agent. There may be a lowered resistance to other kinds of stress. Finally, No. 3. A STATE OF EXHAUSTION may follow if the stress is too prolonged. The body resistance collapses and the alarm reaction may return . . . If stress does not cease, the body may develop a DISEASE OF ADAPTATION. The adrenals may be damaged, and arterial, G.I., joint, or other lesions may develop . . . Selye emphasizes that the hypothalamus, hypophysis, and adrenals have a very important part in integrating the body defenses against stress.

ARIZONA MEDICINE seems to own a piece of MEDICAL ECONOMICS. That journal had a picture of one of our editors in March, and DR. LESLIE B. SMITH made it in May . . . His phiz appeared next to excerpts from his editorial on 'How to Combat Tirades Against Medicine'. (Remember?—Doctors must give patients the true financial picture. The public prints must give the people a fair picture of physicians).

The Dr. W. Alvarez item-of-the-month seems to be a hopeful article on 'DRUGS FOR DISTURBED MINDS'. It mentions a series of drugs which have some degree of psychic effect, opium derivates, alcohol, mescaline (a southwestern drug used by the Indians, mescaline, and made from cactus), hormaline, yohimbine, medmain, barbiturate sedatives, and the amphetamine-like group . . . The newest drug is CHLORPROMAZINE, and it has been said to reduce mania in the insane. It could be effective in lesser disturbances, but has not been so tested . . . Wooley and Shaw at the Rockefeller Institute have found that 'serotonin', a blood substance, is needed for brain function and its absence coincides with certain mental upsets. No way has yet been found to get it from the blood to the brain.

Most people, especially the politicians, are

against sin, so it is unusual to see a well-known medical editor come out in favor of the VICES IN OLD AGE. Dr. Russell Cecil of New York believes that there are comparatively few compensations for the oldsters, even when they are asymptomatic. He approves the minor vices of the flesh, often known as habits, and believes that if a couple of cigars or a cocktail bring pleasure and diversion they are to be encouraged.

For discouraged gynecologist-type M.D.s., TRICHOMYCIN may be a possible help. TRICHOMONAS VAGINALIS is very resistant to therapy, and if your favorites have failed you can try the Japanese method . . . One tablet of trichomycin per vaginum resulted in negative smears. When 4 or 5 doses were used, the effects lasted a week. When therapy lasted 2 weeks the effects persisted 2 to 4 months . . . It was of added interest that a week of daily doses also provided symptomatic relief from moniliasis, and negative cultures in 22 of 26 cases . . . We should know whether it works in us, same like Japan people.

It is said that aging (in the early stages from the 30th to 50th years) depends in large part on the state of mind, or on mental habits . . . This in turn depends on how old you feel, how old you think you should feel, how old your children and friends think you are . . . A good method for casting off the stigmata of too many previous years is to watch your language. .There is no need to talk in an ultra-jivy way, but you should carefully consider your slang and delete such items as would tend to turn the clock back too far. Eg., "He knows his onions!"; "She was swanky"; "Yipes"; "What a Schmo!"; "Oh, Boy!"; or even 'Hot Dog!" . . . These are comfortable to use, but archaic.

"When the medical profession learns to manage the threat of HEMORRHAGE FROM PEPTIC ULCER in a satisfactory manner, the mortality of the disorder will have disappeared" . . . Thus spoke Wangensteen in "Minnesota Medicine'. It's a bit surprising to some, but not to thoughtful surgeons. They say perforations are fairly controllable.

Fields and Hoff reported an improbable success in 1952 from Vitamin B 12 in TRIGEMINAL NEURALGIA. Now Surtees and Hughes confirm the usage in 18 cases . . . They usually gave 1,000 mcg. daily for 7 to 10 days, with several doses a week for a few more weeks, by intramuscular route. There were no toxic symptoms, even in a few cases given two doses per day . . . Fifteen cases responded (as well as one with glossopharyngeal neuralgia), but the speed of relief varied between a few days and a few weeks . . . Fifteen cases of spastic colon would not be many, but they amount to a fairly large series of fifth nerve lesions.

Nervous and skeptical prescribers of estrogens can relax in at least one situation. Davis reports in the Journal of Clin. Endocrin. that **young patients with ovarian failure** can be developed to the mature state by continuous sub-threshold doses with no undesirable effects, and rare 'escape' bleeding . . . Skeletal, secondary sex characteristics, and the reproductive organs will become normal (except for child-bearing). . . . The span of such therapy can be 25 years without serious hazard, the man says.

THE YEAR'S OLDEST INVITATION — If the Cooper Ornithological Society invited all lawyers who owned canary birds to go see a tall tree in Wickenburg on the third Saturday in July it couldn't be much more surprising than a recent full-page announcement in the Michigan State Medical Journal . . . The State Medical Society invited all members, family, and friends to attend the dedication of the BEAUMONT MEMORIAL on that day. .But on Mackinac Island! . . . A zealous Wisconsin fan of Beaumont would probably claim that Beaumont would have been busy inspecting Alexis St. Martin's gastrict function (in one of the Wisconsin military posts), and Alexis would either have had the 'duty', or wouldn't have been invited.

TUBERCULOSIS NEWS NOTES—The sessions of the Nat'. TB Ass'n. and Amer. Trudeau Society were moderately productive. They came up with some paradoxical findings, including the following: Chemotherapy allows EARLIER AMBULATION of most patients IN the sanatorium. Initial ambulatory therapy is better than nothing (e.g. in large cities), but it is NOT good. Sanatorium care is the BEST if you have the beds and can get the patient to go there . . . The SEAL SALE PEOPLE are naturally disturbed at some of the medical reports (or newspaper reports of medical reports), since the only mildly enlightened public may think that the TB control job is done. REVENUE MAY DROP just when a 'knock-out' drive is most needed . . . CASEFINDING may lag if voluntary and local groups don't fill the gaps left by the USPHS withdrawal. Routine x-raying in GENERAL HOSPITALS offers the best potential plan . . . BCG VACCINE, often pushed around and too little used, was given a good boost by Dr. Anderson of USPHS and Dr. Long of the research council. No new drive to implement the approved usage was proposed. The 'Research Foundation' in Chicago is the only group now making the vaccine for interstate sale . . . CHEMOTHERAPY seems to be more uniformly used than at any time in the past. A panel agreed that TWO DRUGS should be used, rather than three; that these should NOT be the two best; that STREPTOMYCIN AND PAS are most logical, since isoniazed may be used with PAS, and may also be the best drug to use with the potent,

unavailable, and somewhat toxic pyrazinamide (all workers now report 1 to 5% jaundice with the latter) . . . Surgery is more often RESECTIONAL than ever. Resections have edged pneumothorax farther towards the limbo, since it is safer, better, quicker, and more permanent. PNP is still used in some bilateral cavity cases, but usually as a stopgap . . . Chemotherapy is used for longer periods, and medical observation should continue for years. The drug usage is never less than a year, or a minimum of 6 months after "target-point", whether it is reached by drugs alone or by surgery. ("TARGET-POINT" is agreed to be the time when bacterial studies are negative for 3 months, when all cavitation is closed, and when the x-ray is stable. Dr. Paul Samson urges that "quiescent bronchi" also be attained) . . . Dr. Edgar Medlar, long-time laboratory and research worker, was given the Trudeau Medal, and the choice was very pleasing. Dr. John Skavlem took over as Pres. of the NTA and Dr. John Steele as Pres. of the ATS.

A method of considerable dispute in chest surgery is THE USE OF PROSTHESES, or the placement of foreign materials in a vacant area . . . The chief reasons for controversy are the antagonism against use of any foreign bodies in the body; the unsatisfactory results from some of the usage; and the introduction of new materials and uses . . . It is probably that the ideal material has not yet been found, and that air, oil, plastic bags, spheres, and sponges all have certain disadvantages. The site of placement has usually been in a site to produce collapse or compression of the lung, which can cause trouble. Surgeons being human (this is said for purposes of argument), and difficult lesions needing some sort of therapy, the selection of cases and location of plombages has not always been the best . . . A NEW OPERATION has yet to receive the full weight of disapproval which experience can bring. A lobe is removed, an extrapleural space is made in that location, and the space is then filled with lucite spheres or a sponge. This procedure has the possible advantage of simple replacement rather than compression. The lesion is gone; the space filled; and the complications and sequellae in the first year are scanty . . . We will tell you the fate of the first 120 cases (by Cotton of California) in another 2 to 5 years. The 6 to 18 month results are very good.

Report on Actions of the House of Delegates American Medical Association 103rd Annual Meeting June 21-25, 1954, San Francisco

PHOENIX, Arizona, July 3, 1954—Fee splitting, osteopathy, closed panel medical care plans, veterans' medical care and the training of foreign medical school graduates were among the major subjects of discussion and action during the sessions of the House of Delegates at the American Medical Association's 103rd Annual Meeting June 21-25 in San Francisco.

Named as president-elect for the coming year was Dr. Elmer Hess of Erie, Pa., who, until his election, was serving as a member of the House of Delegates and as Chairman of the Council on Medical Service. Dr. Hess will become president of the American Medical Association at the June, 1955, meeting in Atlantic City, succeeding Dr. Walter B. Martin of Norfolk, Va. Dr. Martin took office at the Tuesday evening inaugural session in San Francisco's Palace Hotel.

The House of Delegates voted the 1954 Distinguished Service Award of the American Medical Association to Dr. William Wayne Babcock of Philadelphia for his outstanding contribution to medicine and humanity. Dr. Babcock, who was professor of surgery and clinical surgery at Tempe University School of Medicine from 1903 to 1944, received the award from Dr. Martin at the Tuesday evening inaugural ceremony.

Fee Splitting

The House adopted a supplementary report of the Reference Committee on Miscellaneous Business which recommended acceptance of a Judicial Council report on the subject of billing and made the additional recommendation "that the House of Delegates resolve that it firmly opposes fee splitting, rebating or payment of commissions in any guise whatsoever, and that it further opposes any mechanism that encourages this practice."

The Judicial Council report included the following statements:

"The Judicial Council is of the opinion that the only new facet concerning this subject that has come up recently is the case of joint billing to some of the non-profit insurance companies. In many cases these insurance companies insist on a joint or combined bill, but the bill is being paid in most instances by two checks. This is not considered unethical and all insurance plans which do not pay the individual physician in this manner should be urged to do so.

"The Judicial Council is still of the opinion that when two or more physicians actually and in person render service to one patient they should render separate bills.

"There are cases, however, where the patient

may make a specific request to one of the physicians attending him that one bill be rendered for the entire services. Should this occur it is considered to be ethical if the physician from whom the bill is requested renders an itemized bill setting forth the services rendered by each physician and the fees charged. The amount of the fee charged should be paid directly to the individual physicians who rendered the services in question.

"Under no circumstances shall it be considered ethical for the physician to submit joint bills unless the patient specifically requests it and unless the services were actually rendered by the physicians as set out in the bill."

Osteopathy and Medicine

Four resolutions dealing with the osteopathic problem were considered. The House accepted a recommendation by the Reference Committee on Medical Education and Hospitals and adopted a Supplementary Report of the Board of Trustees on a Report of the Committee for the Study of Relations Between Osteopathy and Medicine:

"The justification or lack of justification of the 'cultist' appellation of modern osteopathic education could be settled with finality and to the satisfaction of most fair-minded individuals by direct on-campus observation and study of osteopathic schools. The Committee, therefore, proposed to the Conference Committee of the American Osteopathic Association that it obtain permission from the Committee for the Study of Relations between Osteopathy and Medicine to visit schools of osteopathy for this purpose.

"The Conference Committee favorably recommended this proposal to the board of trustees of the American Osteopathic Association which considered it at a special meeting on Feb. 6-7, 1954. It has referred the question to its house of delegates which will act upon the proposal in July, 1954. If the action of the house of delegates of the American Osteopathic Association be favorable, the on-campus observations can be carried out in the fall of this year.

"The Committee therefore recommends:

"1. That no action be taken on the report at this time and that final action be deferred until December, 1954.

"2. That the Committee be continued until December, 1954, in order to be available to evaluate education in schools of osteopathy should the house of delegates of the American Ostoeopathic Association act favorably upon the recommendation of its Conference Committee."

Closed Panel Plans

The much-publicized New York resolution, calling for several changes in the Principles of Medical Ethics relative to participation in closed panel medical care plans, was considered by the Reference Committee on Miscellaneous Business. That committee made the following recommendation, which was adopted by the House:

"In the discussion before your reference committee on this resolution, it became apparent to the committee that clarification and interpretation of the Principles of Medical Ethics in relation to prepaid medical care plans are desirable. As set forth in the bylaws, the Judicial Council has jurisdiction on all questions of medical ethics.

"Therefore, your reference committee recommends that the House of Delegates request the Judicial Council to . . . investigate the relations of physicians to prepaid medical care plans and render such interpretations of the Principles of Medical Ethics as the Council deems necessary, and report to the House of Delegates not later than the next annual meeting of the Association.

"The committee further recommends that the New York resolution be referred to the Judicial Council for consideration in connection with this investigation."

The New York resolution, among other suggested changes, would add the following new paragraph to Chapter I, Sec. 4, "Advertising," of the Principles of Medical Ethics:

"It should be understood that any medical care plan, company, or organization which advertises for subscribers and directs such subscribers to a restricted panel of physicians for medical care is advertising for the benefit of the physicians involved."

Veterans' Medical Care

Accepting a report by the Reference Committee on Legislation and Public Relations, the House adopted two strong resolutions condemning the present practice of establishing service-connection for veterans' disabilities by legislative fiat. In recommending passage of both resolutions, the committee said:

"The study of the chronological expansion by law and regulation, together with evidence presented of pending legislation now before a Congressional Committee, emphasize all to clearly the imperative need of decisive action on the part of the American Medical Association.

"It is the opinion of the Committee that the time is at hand when the American Medical Association and its component societies should go all out in preventing this unscientific method of determination of service-connected disabilities, and that we respectfully request that copies of these resolutions be transmitted to the Congress of the United States and other appropriate federal agencies."

In connection with veterans' medical care, the House also adopted recommendations by the Reference Committee on Insurance and Medical Service which reaffirmed the policy on non-service-connected disabilities, established at the 1953 annual meeting, and which commended the informational program carried out since then by the Committee on Federal Medical Services of the Council on Medical Service.

Foreign Medical Graduates

Three resolutions and a Board of Trustees supplementary report were submitted to the House regarding the evaluation of foreign medical school graduates, a subject which attracted major interest earlier this year at the annual Congress on Medical Education and Licensure in Chicago. The Reference Committee on Medical Education and Hospitals spent much of its time listening to the ideas and proposals of various state medical societies, state licensing boards, members of the Council on Medical Education and Hospitals and others. The reference committee recommended that "the intent and aims of this Supplementary Report and the three resolutions can best be met by referring the entire problem to the Council on Medical Education and Hospitals for further study. It is recommended that the Council report at the Interim Session in 1954 regarding the progress relative to this study." The House adopted the reference committee's recommendations.

Seal of Acceptance

The Council on Medical Service presented a supplementary report outlining the difficulties encountered in conducting the Seal of Acceptance program, and recommending discontinuance of the Seal of Acceptance for voluntary health insurance plans. The report said that the standards and principles of the program will be maintained as guides and recommendations for all groups operating or establishing plans. The House, on recommendation of the Reference Committee on Insurance and Medical Service, adopted the Council report, thus terminating the Seal of Acceptance program for voluntary health insurance plans.

Registration of Hospitals

The House also approved a Board of Trustees report calling for discontinuation of the registration of hospitals by the Council on Medical Education and Hospitals and suggesting that the Joint Commission on the Accreditations of Hospitals be requested to undertake the registration of hospitals in addition to its present accreditation activities.

Miscellaneous

Among a wide variety of other actions, the House also:

Voted to continue the holding of the annual Clinical Meetings;

Approved the establishment of a program of medical military scholarships with appropriate safeguards limiting the number of students involved;

Approved the extension, on a voluntary basis, of the Medical Education for National Defense program which currently is in operation in five medical schools as a pilot study, and

Authorized the Council on Scientific Assembly to conduct a thorough study of the use of tape recordings of the material presented at meetings of the Council, and asked for a report at the December meeting.

Approved resolution on Automobile Safety submitted by our state.

Opening Session

Highlights of the opening House session on Monday were selection of Dr. Babcock as recipient of the Distinguished Service Award and the addresses by Dr. Edward J. McCormick of Toledo, then president of the Association, and Dr. Martin, then president-elect.

Dr. McCormick called upon the medical profession to take the guess work out of medical costs by adopting average fee schedules on an area or regional basis. The Reference Committee on Reports of Officers later suggested that the Board of Trustees make a study of such programs where they already are in operation, and the House approved.

Dr. Martin, in his opening session address, declared that the most urgent problem before the medical profession is that of financing hospital services to make them more generally accessible. In his presidential inaugural address,

Dr. Martin said that physicians are duty-bound to keep themselves informed on public matters affecting the medical welfare of the people, and he also urged doctors to "reach back farther than the disease" in treating their patients.

Special Citations

Two special citations were presented by the Association during the San Francisco meeting. During the presidential inauguration ceremony Dr. McCormick presented an award to a fellow Toledoan, Dr. Nicholas P. Dallis, for his outstanding health educational service as the writing member of the team that produces the illustrated feature, "Rex Morgan, M.D." At the closing House session on Thursday, Dr. Martin presented a special citation to Smith, Kline & French Laboratories of Philadelphia for "pioneering use of television in bettering the health of the nation." The plaque was accepted for the company by Mr. Francis Doyer, president.

The closing session also brought the announcement that the California Medical Association had presented a check for $100,000 to the American Medical Education Foundation.

Election of Officers

The election at the closing session brought the following results, in addition to the selection of Dr. Hess as president-elect:

Dr. Clark Bailey of Harlan, Ky., was named vice president.

Dr. David B. Allman of Atlantic City and Dr. F. J. L. Blasingame of Wharton, Texas, were relected to their positions on the Board of Trustees.

Also reelected were Dr. George F. Lull of Chicago, secretary; Dr. J. J. Moore of Chicago, treasurer; Dr. James R. Reuling of Bayside, N. Y., speaker of the House of Delegates, and Dr. Vincent Askey of Los Angeles, vice speaker.

Dr. J. Morrison Hutcheson of Richmond, Va., was named by Mr. Martin as a member of the Judicial Council to succeed Dr. Edward R. Cunniffe of New York, who served as Council chairman for many years. Dr. Homer Pearson of Miami, Fla., was elected new chairman.

Dr. W. Andrew Bunten of Cheyenne, Wyo., was elected a new member of the Council on Medical Education and Hospitals, succeeding Dr. W. L. Pressly of Due West, S. C. Dr. Charles T. Stone, Sr., of Galveston, Texas, was reelected to the same Council. Both terms run to 1959.

Dr. Floyd S. Winslow of Rochester, N. Y., was reelected to the Council on Constitution and By-Laws for a term ending in 1959.

Dr. Joseph D. McCarthy of Omaha, Neb., was reelected to the Council on Medical Service for another term running to 1959. To fill the vacancy created on the same Council by Dr. Hess' resignation following his election as president-elect, Dr. Robert L. Novy of Detroit, Mich., was selected.

The House of Delegates also chose New York City as the place for the 1957 annual meeting, San Francisco for 1958 and Atlantic City for 1959. Previously selected were Atlantic City for 1955 and Chicago for 1956. The dates of next year's meeting in Atlantic City are June 6-10.

Respectfully submitted
J. D. Hamer, M. D.
Delegate — Arizona

COCCIDIOIDOMYCOSIS. Treatment of disseminated type with ethyl vanillate. An interesting report by Fiese and associates of the Veterans Administration Hospital in Fresno, Calif., appears in California Medicine for May, 1954. The usual idea about this condition is that it either localizes in the lungs and recovers spontaneously or that it disseminates into the fatal form. The gamut of the new biotics has been run in this disease with almost no benefit. These authors reports seven cases of disseminated coccidioidomycosis with good results in all and adds a comment on four additional cases, also with good results. They comment—"if therapeutic concentrations can be maintained, ethyl vanillate is useful in the treatment of disseminated coccidioidomycosis and may be curative.

DISEASES OF THE ESOPHAGUS. A symposium of three articles appears in California Medicine for May, 1954, including: "Esophagitis, Peptic Ulcer and Early Stricture," by Wm. L. Rogers of San Francisco; "The Esophagus in Radiologic Problems" by Robert K. Arbuckle, Oakland; and "Injuries and Wounds of the Esophagus" by Paul C. Samson of Oakland. The articles are short and to the point.

TREATMENT OF CYSTIC HYGROMA. James A. Martin, M.D., Dallas, Texas. Texas State Journ. of Med., April, 1954.

As discussed in this article, the term "cystic Hygroma" refers to an infiltrating multilocular tumor containing endothelial lined spaces and usually arising within the neck or axilla of a child. Usually regarded as a problem of surgery, many and probably most of these tumors are radiosensitive to a remarkable degree and can be ablated by carefully planned and administered radiotherapy. This fact should be borne in mind when giving consideration to the treatment of such lesions.

Interesting TOPICS

RECOMMENDED READING IN CURRENT MEDICAL JOURNALS

URINARY TRACT INFECTIONS IN CHILDREN. Article by Albers et als, Journ. of the Okla. State Med. Ass'n., Nov. 1953, page 308, based on study of 50 patients, with nine case reports and several x-ray films.

BRONCHIECTASIS IN CHILDREN. Chloramphenicol treatment. Article in British Med. Journ., for Nov. 14, 1953, by Franklin and Garrod, page 1067. Cites 36 cases, 35 of whom had pure or almost pure infection by H. influenzae.

SUBSTERNAL PAIN AND THE FUNCTIONAL ESOPHAGUS. An interesting discussion by Harold C. Klein, in Clinical Medicine of November, 1953, page 599.

DIVERTICULOSIS AND DIVERTICULITIS OF THE COLON. By Charles H. Mayo, in Ontario Medical Review, of November, 1953. A brief and interesting paper.

OCCULT ECTOPIC PREGNANCY. A fairly comprehensive paper by Chas. S. Stevenson of Detroit, in the Illinois Med. Journ. of Nov. 1953, page 302, with tables of differential diagnosis and three case citations.

OBSTETRIC HEMORRHAGE. A series of four articles; hemorrhagic conditions in the first trimester by Smith, placenta previa by Miller, Abruptio placentae by Gustafson, and postpartum hemorrhage by MacKenzie. The Journ. of the Ind. State Med. Assn., Nov. 1953, pp. 1149 ff.

ORGANIC DISEASE SIMULATING PSYCHOGENIC DISORDERS. Article by A. D. Dennison, Jr., in The Journal of the Med. Soc. of New Jersey, November, 1953, p. 520.

THE SITES OF METASTASIS IN CARCINOMA OF THE CERVIX. An instructive article by Alvarez of Seattle, Wash., based on study of 71 patients showing metastases. The Western Journ. of S. G. & O., November, 1953.

DIABETES MELLITUS. Two articles discussing this condition in the aged by Goodman and Goldberg, and diabetes and obesity, by Thos. P. Sharkey. The Ohio State Med. Journ., November, 1953, pp. 981 ff.

WHAT'S NEW IN PEDIATRICS? A panel discussion, in California Medicine, Nov. 1953, pp. 353 ff. Pediatric Endocrinology by Frank L. Plachte, What's New in Cerebral Palsy by Margaret H. Jones, Equine encephalitis by Bruhn and Lennette and the management of strabismus by Arthur Jamplosky.

SURGERY IN BENIGN GASTRIC AND DUODENAL ULCER. Howard K. Grey, The South Dakota Journ. of Med. & Pharm., November, 1953. Good analysis of the present day surgical indications, paper from the Mayo Clinic.

INDUSTRIAL MEDICINE. "Calling every doctor," because no doctor practices medicine these days without some time coming in contact with industrial cases. There articles in The Journ. of the Okla. State Med. Assn., for October, 1953, are timely. One by Judge Hieronymus on "Evaluating Medical Testimony," one by F. L. Flack on "Groin Hernias in Industry", and one by Kieffer Davis on "Relation of the Private Physician to Industry." All worth reading.

RHEUMATOID SPONDYLITIS. Charley J. Smyth, Denver, South Dakota Journ. of Med. & Pharm., December, 1953. A well written article, stressing the importance of early diagnosis and the important place of x-ray therapy in the management.

THE ALLERGIC CHILD. A very sensible and practical article entitled "Treatment of the Allergic Child: What Parents Should Be Told"; by Harold A. Abramson, M.D., Chief of the Allergy Clinic, Mt. Sinai Hospital, New York. In The Ohio State Medical Journal, March, 1954.

RENAL TUMORS. A Symposium, covering Diagnosis (Repman), Pathology (Cannon) and Treatment (Beck), in Del. State Med. Journ., February, 1954.

GYNECOLOGIC SURGERY. Journ. of the Iowa State Med. Soc., March, 1954. Good discussion on "Selection of Patients for Gynecologic Surgery.

GASTRO-INTESTINAL SYMPOSIUM. A good series of papers on gastro-intestinal diseases or lesions appears in Texas State Journ. of Med., for February, 1954. This includes articles on "Gastric Cancer" as a problem of the internist (Comfort), "Masive Hemorrhage from the Upper Gastro-Intestinal Tract" and its surgical management (Thompson), "Duodenal Diverticula" and radiologic evaluation (O'Bannon and Grunow), "Ulcerative Colitis" and its less common manifstations (Rowe), "'Anorectal Conditions" and prevention of pain from.

ACUTE SURGICAL ABDOMEN. Harold J. Muendel, Journ. of the Med. Soc. of New Jersey, February, 1954. "Seven conditions responsible for ninety percent of acute abdominal emergencies are discussed and important points in differntiation enumerated."

MOLD CONTENT OF AIR; CLINICAL ASPECTS. Schaffer and Seidmon, The Journ. of the Med. Soc. of N. J., February, 1954. Relationship between allergic conditions and mold content of air, indicating that molds are as important as pollens.

CORONARY HEART DISEASE. Good discussion of coronary insufficiency by V. Thomas Austin The Illinois Med. Journ., February, 1954.

ALLERGIC DERMATITIS. Use of cortisone in. Samson Fisher, M.D., The Journ. of the Maine Med. Assn., February, 1954.

Organization Page

CIVICS

Norman A. Ross, M.D., Phoenix, Arizona

AMERICAN NATIONAL RED CROSS, MARICOPA COUNTY CHAPTER, 329 NORTH 3rd AVENUE, PHOENIX, ARIZONA.

Gamma Globulin Program for Summer Campers Gets Underway.

A recent regulation regarding the use of Gamma Globulin was issued to the State Health Department which made group immunization possible and it was felt that the groups that would receive the greatest benefit from this blood derivative would be the boys and girls attending summer camps.

Gamma Globulin is a by-product of the Red Cross National Blood program and has been supplied free of charge to doctors through the health department since 1944, according to John F. Rolfes, manager of the Red Cross.

Its use in connection with polio is fairly recent when in early 1951 and again in 1952 the National Foundation for Infantile Paralysis requested Red Cross to provide gamma globulin for use by the National Foundation for Infantile Paralysis to conduct experiments on the value of Gamma Globulin as a preventive against the paralytic effects of poliomyelitis. The Red Cross gave 260,000 cc of gamma globulin to the National Foundation for Infantile Paralysis for experiments in Utah, Texas and Iowa. Favorable reports were published following the completion of these tests.

From the Red Cross Blood Program 11,118,-106 cc of gamma globulin is being made available to the United States Health Service for distribution to local state and territorial Health Departments through 1953 and 1954.

NATIONAL FOUNDATION FOR INFANTILE PARALYSIS, 120 Broadway, New York 5, New York; State Office: 39 West Adams, Phoenix, Arizona.

The National Foundation for Infantile Paralysis has purchased all commercial amounts of gamma globulin at a cost of $19,000,000, for the Office of Defense Mobilization of the federal government.

COMMENT:

Such releases to this page warranted a call by us to the Arizona State Health Department and the office of Dr. C. G. Salsbury. The source of gamma globulin was verified. The means of distribution of this substance is by way of the office of Civilian Health Requirements, a division of the United States Public Health Service and through the State Public Health Office.

Gamma globulin is, we are advised by the state office, available for use in two fields, one in group innoculation for children who are going to camp. This is felt to be of importance because of the fatigue factor. The second use is also for group innoculation and is a variance from the previous prophylactic measures which were directed to the household contacts. This program provides for neighborhood, department house, or community innoculation.

In each of these programs the social facilities of the community are utilized to their fullest extent.

The State Public Health Service knowing that many volunteer agencies have medical (prior to camp) examination programs, discovered that the Red Cross in Phoenix would furnish a central facility, would purchase the necessary 20 cc syringes, and would aid in the clerical angles of a centralized program, accepted the offer to man a central clinic. Employees of the State Public Health Office are donating their time the evenings of these clinics through the summer.

Physicians and laymen who have previously taken care of the various groups health problems are cooperating and are delivering similar service in this central area.

At the time this page goes to press the Phoenix Gamma Globulin Clinic which is, to the Health Department's knowlege, the only clinic in existence, is functioning most satisfactorily. They are most complimentary of the facility furnished by the Phoenix Red Cross Chapter and the numerous agencies who regularly conduct health examinations for the pre-camp children and who are cooperating.

The program has had one most desirable ef-

fect. It has increased the public knowledge and the public interest in all phases of preventive medicine. The State Health Department is having an ever increasing number of parents come to its offices and ask for gamma globulin so that they may take the globulin, and their children, to private physicians for innoculation.

Literature, distributed by private community social agencies, advises that gamma globulin is of importance in the treatment of infantile paralysis but that other conditions associated with camp furnish increasing indication for its use. Measles and hepatitis may thus be prevented during this summer season.

This is an experimental research program that is being carried on nation-wide through the cooperation of the Red Cross, National Foundation for Infantile Paralysis, and our Public Health Department. Its results are being watched and reported in the greatest detail.

The State Health Department is anticipating the effect state-wide, of the increase in knowledge and interest in this preventive measure for the paralytic polio and immunization against measles and hepatitis.

Note: There is no dearth of pertinent, concise material. Again, we're out of space for this month.

The New Physicians and Dentists Lounge



"Twelfth Heaven" and "Doctors' Retreat" are some of the descriptive titles being given by Professional Building tenants to the new Physicians and Dentists Lounge located on the 12th floor of the Phoenix skyscraper. Officially opened June 14, the comfortably furnished facilities are proving extremely popular with the several score physicians and dentists who maintain offices in the Professional Building and for whose use the lounge was made available without obligation by the building's management. This view shows a portion of the conference table area, with library shelves and a writing desk in the background alcove. Smartly decorated, the lounge encompasses 1100 square feet of space and can accommodate as many as 40 persons.

ARIZONA *Pharmaceutical* PAGE

YOUR HELP IS NEEDED

THERE ARE TWO IDENTICAL BILLS NOW PENDING IN THE U. S. CONGRESS KNOWN AS "CLEAN CODEINE BILLS", AND OFFICIALLY S-3447 (NOW BEFORE THE SENATE FINANCE COMMITTEE) AND HR 9163 (BEFORE THE HOUSE WAYS AND MEANS COMMITTEE) WHICH WILL LEGALIZE A PROCEDURE CALCULATED TO SERVE THE PATIENT, MEDICAL PRACTITIONERS AND DISPENSING PHARMACISTS IN EXPEDITING SERVICES FOR THE SICK.

UNDER PRESENT LAW A PRACTICING PHARMACIST IS NOT PERMITTED TO ACCEPT TELEPHONED OR ORAL PRESCRIPTIONS FOR SIMPLE COMBINATIONS OF NON-HABIT FORMING DRUGS COMPOUNDED WITH OTHER THERAPEUTIC NON-NARCOTIC MEDICINALS. OF COURSE, THE TELEPHONE IS HERE TO STAY. MANY, MANY MEDICAL TRANSACTIONS ARE RESOLVED DAILY IN THE PRACTICE OF MEDICINE AND PHARMACY VIA THE TELEPHONE. THE LAW WHICH PROHIBITS A PHYSICIAN FROM TELEPHONING COMMON EVERY DAY PRESCRIPTIONS FOR THE ALLEVIATION OF PAIN WAS ENACTED 40 YEARS AGO. THIS FEDERAL PROHIBITION IS FAR BEHIND THE ADVANCEMENT OF MEDICAL AND PHARMACEUTICAL SCIENCE AND AS A CONSEQUENCE NEEDS CORRECTION.

THE BILL WOULD PERMIT THE FEDERAL COMMISSIONER OF NARCOTICS TO ISSUE A REGULATION PERMITTING THE ORAL ACCEPTANCE BY A PHARMACIST OF CODEINE, CAFFEINE CITRATE AND PHENACETIN (PAC CAPS); DIONIN PRESCRIBED AS EYE DROPS (OPTHALMIC); PAPAVERINE HYDROCHLORIDE; NARCOTINE AND OTHER HARMLESS DRUGS HAVING NON-ADDICTION POTENTIALS.

THE PHARMACIST, ON RECEIVING AN ORAL DIRECTIVE FROM THE PRACTITIONER, MUST IMMEDIATELY MAKE A WRITTEN RECORD OF THE PRESCRIPTION AND SHALL INSCRIBE ON THE LABEL OF THE CONTAINER THE SAME INFORMATION AS IS REQUIRED IN FILLING A WRITTEN PRESCRIPTION. AN ORAL PRESCRIPTION SHALL NOT BE REFILLED WITHOUT THE CONSENT OF THE PRESCRIBER.

IF, AFTER CLEARING OFFICIAL CHANNELS, THE FEDERAL NARCOTIC COMMISSIONER SHOULD FIND THAT ANY REGULATION ISSUED PURSUANT TO THIS ACT IS BEING ABUSED ALL HE HAS TO DO TO RESCIND THE REGULATION IS TO SO ANNOUNCE IT IN THE FEDERAL REGISTER. SIX MONTHS FROM THE DATE OF ITS PUBLICATION THE REGULATION BECOMES NULL AND VOID. THIS RECAPTURE CLAUSE IS INSERTED IN THE BILL TO MAKE ABSOLUTELY SURE THAT THE PUBLIC HEALTH IS PROTECTED.

SECTION 1 IS MERELY A REPETITION OF THE PRESENT CODE. SECTION 2 BEGINNING WITH "IN LIEU OF . . ." IS AN ADDITION TO THE CODE WHICH OUTLINES THE CAUTIONS THE ADMINISTATOR MUST TAKE BEFORE A REGULATION IS ISSUED THEREUNDER. IN SECTION 2 ALSO IS THE RECAPTURE CLAUSE BEGINNING WITH "IF THE SECRETARY . . ." SECTION 3 IS A RECAP OF THE PRESENT STATUTE. SECTION 4 IS AMENDED TO RECONCILE THE WRITTEN RECORD WITH AN ORAL PRESCRIPTION AND SECTION 5 IS ALSO A DUPLICATE OF THE PRESENT CODE.

WE ARE EXTREMELY ANXIOUS TO GET ACTION ON THESE BILLS THIS SESSION OF CONGRESS BECAUSE STATE LEGISLATURES MEET IN 1955. IN ORDER TO OPERATE UNDER THE BILL MOST OF THEM WILL HAVE TO AMEND THEIR STATE STATUTES. IN MANY STATES THE STATE LEGISLATURES DO NOT MEET AGAIN UNTIL 1957. IT THEREFORE BECOMES OBVIOUS THAT ACTION ON THE BILL SHOULD BE DETERMINED IN THE 83rd CONGRESS.

IN SUMMATION THIS BILL (1) LEGALIZES WHAT IS NOW AN ILLEGAL PROCEDURE; (2) THE DURHAM-HUMPHREY LAW (PUBLIC LAW 215) PERMITS THE ORAL ACCEPTANCE OF BARBITURATES AND PRESCRIPTION LEGEND DRUGS;

(Continued on Page 276)

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WHEN WRITING ADVERTISERS PLEASE MENTION THIS JOURNAL

(3) THIS BILL IS "FOOL-PROOF"; (4) IT WILL EXPEDITE SERVICES TO THE SICK; (5) THIS BILL HAS THE SAME SANCTION OF THE COMMISSIONER OF NARCOTICS, HARRY J. ANSLINGER; (6) PHYSICIANS ARE NOW PERMITTED TO PRESCRIBE THESE PREPARATIONS TO A PATIENT IN A HOSPITAL MERELY HAVING THE NURSE INDICATE ON THE CHART THAT CODEINE COMPOUNDS ARE ORDERED. MANY EXEMPT CODEINE PREPARATIONS CAN NOW BE PURCHASED ACROSS-THE-COUNTER (WITHOUT PRESCRIPTION) IN A PHARMACY – AMONG THEM ARE CHERACOL COUGH SYRUP AND ELIXIR OF CODEINE AND TERPIN HYDRATE.

WE BELIEVE THIS LEGISLATION IS JUST AS IMPORTANT TO THE PHYSICIANS OF ARIZONA AS TO THE PHARMACISTS AND, THEREFORE, ARE ASKING YOUR SUPPORT. IF YOU BELIEVE IN THE MERIT OF THIS LEGISLATION, WILL YOU CONTACT OUR ARIZONA SENATORS AND REPRESENTATIVES URGING THEM TO MAKE EVERY EFFORT TOWARD EARLY PASSAGE OF S-3447 AND HR-9163.

* * * *

(COPIES OF THE BILLS ARE AVAILABLE FROM THE ARIZONA PHARMACEUTICAL ASSOCIATION).

ANEMIA. Laboratory Investigations in the Diagnosis of of Iron-Deficiency and Simple Chronic Anemia. George Discombe, M.D., B. Sc., British Med. Journ., Feb., 13, 1954. One of the reviews on Clinical Pathology in General Practice. "Iron-deficiency anemia occurs when the body gains iron more slowly than it should to provide for the needs of growth or to compensate for loss by hemorrhage." Iron deficiency is usually accompanied by some reduction in hemoglobin level, to 12.4 g. (80%) or below. Iron deficiency may be recognized by estimation of hemoglobin and of packed cell volume; this permits the calculation of the mean corpuscular hemoglobin concentration; if below 30% this indicates iron deficiency; if 32% or over, there is no iron deficiency. If iron deficiency is established the cause must be sought for. Once the diagnosis is made, iron therapy can be started (author recommends iron and ammonium citrate mixture or ferrous sulfate compound tablets), and improvement should be rapid. If the hemoglobin does not start to rise, and it is made certain the patient is taking the medicine, the failure to improve may be due to lack of absorption, and intravenous therapy may be required.

ACCIDENTS–CHIEF KILLER OF CHILDREN. Rosenfield, Allen and Storey, Minnesota Medicine, November, 1953, page 114. One-third of all death in children between ages of one and 15, (227) in Minnesota, in 1952, were due to accidents. Accidents cause more deaths than the combined total of polio, cancer, pneumonia and influenza, rheumatic fever, infectious meningitis, tuberculosis, measles and chickenpox, (224). Major causes of death by accidents include those due to motor vehicle accidents (27%), drowning, burns, mechanical suffocation, firearms, poisoning, falls, farm accidents.

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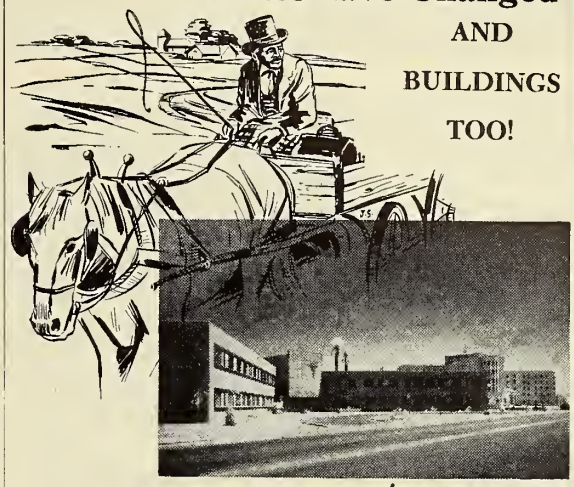
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Woman's AUXILIARY



Mrs. George S. Enfield

ANNUAL MEETING

IT is my privilege and pleasure, as President of the Woman's Auxiliary to the Arizona Medical Association, to present a report of our 24th year, which closed with the Annual Meeting in Chandler, Arizona on April 28th, 1954.

ORGANIZATION—Although our goal of a 10% increase in membership was not realized, despite real effort on the part of membership chairmen on the county level and the State Organization chairman, Mrs. Roy Hewitt, we have shown an increase of 18 members over last year's total. This was accomplished through cards and letters to all doctor's wives, urging them to join and to pay their dues promptly, and through personal invitation to wives of new Medical Society members. Maricopa entertained these new members at coffees in the home of their President-elect, Mrs. Robert Cummings. The State President, President-elect and the organization chairman visited all organized county auxiliaries and one unorganized county, explaining the auxiliary program and urging membership. To all these groups, I wish to express our sincere appreciation for their gracious hospitality.

Graham County dropped from the list of organized counties this year because there were too few doctor's wives to support an organization. However, we have five members-at-large in Graham County who continue to support the auxiliary by their contributions and their public relations activities, as do our members-at-large in the other unorganized counties.

We have 415 active members and 18 associate members distributed as follows:

ORGANIZED COUNTIES		UNORGANIZED COUNTIES	
GILA	15	APACHE	1
MARICOPA	223	COCHISE	7
PIMA	124	COCONINO	5
(119 Act., 5 Assoc.)		GREENLEE	3
PINAL	8	GRAHAM	5
YAVAPAI	25	MOHAVE 100%	2
(12 Act., 13 Assoc.)		NAVAJO	1
YUMA	20	SANTA CRUZ	3
		Total	27

ACTIVE 415
ASSOCIATE 18
MEMBERS-AT-LARGE 27
TOTAL MEMBERSHIP 442

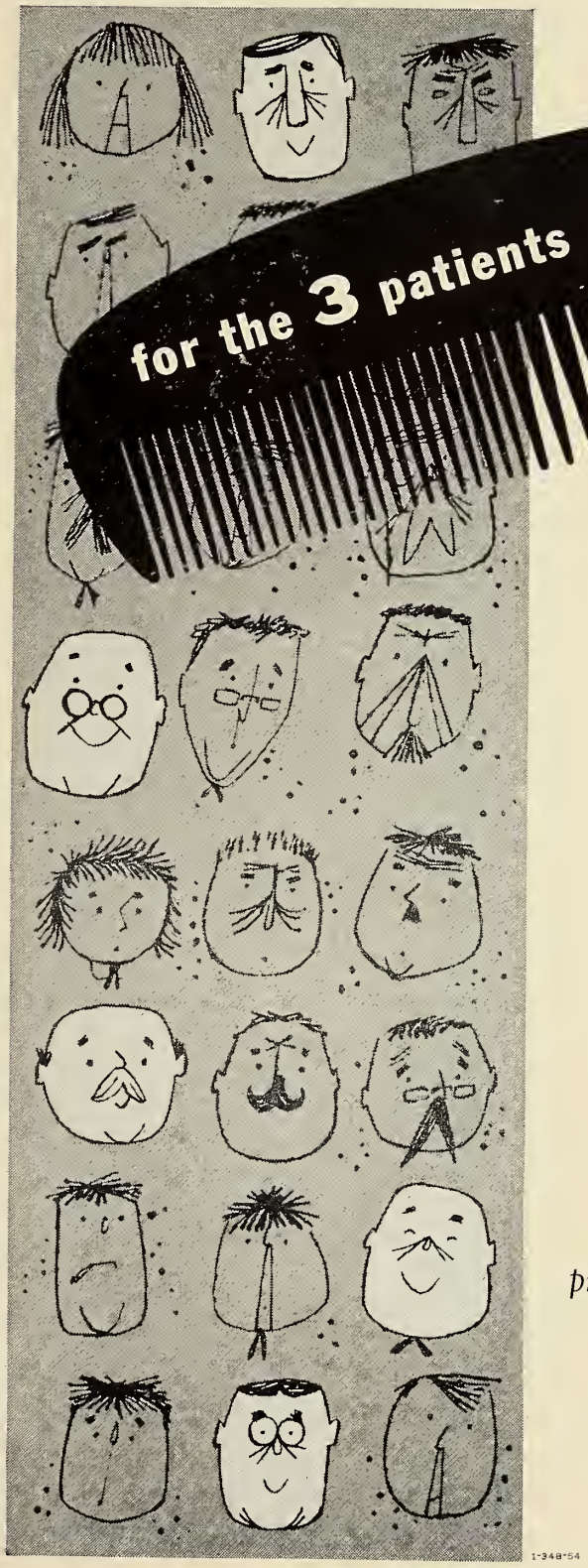
Three NEWSLETTERS have been sent out during this year by the editor, Mrs. Roy Hewitt and her co-chairman, Mrs. John K. Bennett. These have been sent to all wives of physicians in Arizona and to the editor of each State Auxiliary Newsletter, the National President and President-elect of the Auxiliary. Over 600 copies were mailed each issue.

Four regular board of directors meetings were held during the year, with fine attendance and excellent cooperation on the part of all officers and chairmen.

PROGRAM

Interesting, educational and entertaining programs were built around the theme of "Know Your Community" ranging through a variety of subjects such as a playlet "Origin of TB Seals", talks and movies on Civilian Defense, Nurse Recruitment and The Continent and Chile; the conference report by the state president-elect and president, legislation and mental health.

Mrs. Charles S. Powell, second vice president, held a school of instruction on the first day of the convention for incoming officers and chairmen. There were 18 present and all felt it was a success.



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1. Slepyan, A. H. (1952), Arch. Dermat. & Syph., 65:228, February. 2. Slinger, W. N. and Hubbard, D. M. (1951), *ibid.*, 64:41, July. 3. Sauer, G. C. (1952), J. Missouri M. A., 49:911, November.

1-348-54

PUBLIC RELATIONS

The theme for this year's program "Know Your Community" was also used as a springboard for public relations activity. All counties report active participation in the fields of health and health education, and have given their services to many varied and worth-while projects for the betterment of their communities.

1. HEALTH EDUCATION—Radio programs again this year lead the list of endeavors for the dissemination of authentic health information. Five counties have used the electrical transcriptions furnished by the Educational Bureau of the AMA. In addition, Pima County sponsored their children's health radio program "Healthy Living in Our County" with continued interest and enthusiasm on the part of everyone concerned.

2. COMMUNITY SERVICE—Gila and Yuma counties conducted audiometer tests again this year on the school children; the later group has given upwards of 1,000 tests. Every county participated in solicitation and donation of funds for service organizations. Rummage sales were given in Yavapai and Pinal counties to raise funds for their donations to AMEF and other organizations. Yavapai again sponsored a Charity Ball, at Christmas, which netted almost $4,000.00 for the Community Hospital of Prescott. They also plan to procure isolation equipment for the Yavapai County Hospital. Maricopa furnished volunteer aid to the Visiting Nurse Association and bought them a much needed needle-sharpener. They solicited funds to aid their County Heart Association, YWCA, and the Cerebral Palsy Association. A booth for the collection of old sheets for the American Cancer Society was manned for a week. Pima County gave donations to AMEF, School Health Milk Fund, Nurses' Loan Fund. They gave toys and magazines to the Pima County Hospital, and solicited physicians and their office personnel for both Community Chest and Red Cross Drives.

Direct donations of cash, food or gifts were made to individuals or organizations at Christmas time by all counties. Child Guidance Clinics have received financial aid and service in both Pima and Maricopa counties. Individual auxiliary members throughout the state are actively engaged in philanthropic and health organizations and, in many cases, are in key positions in these groups.

The doctor's wives are active members of Hospital Auxiliaries in their communities and in all their endeavors are bettering public relations by being cognizant of their personal responsibility. The state chairman of this committee, Mrs. John K. Bennett, writes "The range for promotion of better health through better understanding and community service was wide and I am glad to report that both as auxiliary members and as individuals, the doctor's wife has met her challenge."

NURSE RECRUITMENT

Nurse recruitment has taken a forward step in Arizona this year by the formation of a joint committee on Nursing Careers, which is made up of three members of the Woman's Auxiliary to the Arizona Medical Association and three members from the Arizona State Nurses Association. This committee has laid plans for an over-all nurse recruitment program in the state. The district presidents and nurses will work with the auxiliary representatives in each county and the state committee will serve in an advisory capacity and as distribution center for films and materials.

Governor Pyle proclaimed the week of March 28 through April 3 as Nurse Recruitment week, during which time an intensive campaign of public education to the need for more nurses was carried on through the media of radio, TV, newspapers, churches and displays in store windows. The week was, as in the past, climaxed by Hospital Open House Day in Phoenix and Tucson, to which high school girls, interested in the career of nursing, were invited.

Future Nurse's Clubs have been shown three films on nursing which have been bought by the auxiliary and the nurses association. The brochure "Your Opportunity to Become a Nurse in Arizona" and the picture strip "Janie's Decision" were given out, following the showing of the film and a student nurse and auxiliary member answered whatever questions were asked. "Nursing has a Future for You" and "Teammates" were made available to all counselors and school nurses. Counselors were also given a pamphlet 'Preparing Tomorrow's Nurses". In Maricopa, during March 67 schools were given a program. Pinal county chairman, Mrs. Wade, showed films to PTA for approval before showing it to the girls. This is a good method of educating parents. Mrs. Wade, was invited to speak on nurse recruitment at a Kiwanis and

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BPW joint meeting of 300 people. She also did an outstanding job on newspaper publicity by contacting all local merchants and selling them the idea of sponsoring a full page ad in the Eloy "Enterprise" from October through June. She kept a bulletin board in the Eloy High School posted with interesting items on nursing as a career. These are excellent ways of drawing the public's attention to the shortage of nurses and of inspiring and maintaining interest among the girls. Yavapai and Yuma had open houses in their Community Hospitals and brought interested girls to Phoenix for Hospital Day on April 3rd. All high schools in Southern Arizona were invited to bring their girls to St. Mary's Hospital Open House on April 3rd.

Mrs. Irene Miller, field representative of the National League of Nursing Education (covering sixteen western states) visited Phoenix and Tucson, March 8 to 12. She met with State and County chairmen and visited the hospitals in both cities. In Tucson, Mrs. Costin, state chairman, arranged for her to meet with high school and junior high school counselors, to whom she was able to give many good suggestions. A note of appreciation was received from Mrs. Miller by the state president, in which she writes "The Medical Auxiliary is making a real contribution every place, but I am especially impressed with Arizona. The meetings were wonderful and I have never known such hospitality. Mrs. Costin and her group were so considerate and they are doing a rare job of public relations."

MENTAL HEALTH—This new committee, in its first year, has done mainly an educational job. All counties have had programs on mental health and have learned what help is available for the mentally handicapped adult and child.

Tucson's Child Guidance Clinic has been in operation for a year. Phoenix has just established one, under the auspices of the Maricopa County Mental Health Association. It will get underway as soon as adequate personnel has been secured. Mrs. Eisenbeiss, Maricopa County Mental Health chairman and state co-chairman, is the first secretary of the Mental Health Association and has been active in the establishment of the clinic. As state president I participated in the program at the conference for presidents and presidents-elect in Chicago last November. This meeting is especially set-up to explain the national program to presidents-elect and the presidents of each state are asked to take part in a panel discussion of some phase of the program. My panel was on mental health and my topic was "State Mental Health Institutions." Maricopa County Auxiliary raised $2,850.50 for the Child Guidance Clinic.

CIVIL DEFENSE—All counties have reported cooperation with their local Civil Defense headquarters. Maricopa's chairman, Mrs. Rouland Hussong, attended a two-day conclave in Tucson in October on the Family Action Program. Reports of local set-ups were given at the county auxiliary meetings. Pima's chairman, Mrs. Shallenberger is a member of a Pima county committee which sets-up Civil Defense training courses.

LEGISLATION—County chairmen were urged to read information on legislation sent to them from national and to pass on such information to their groups. The Bricker Amendment, Tax Legislation and the Reed-Keogh tax deferment for private pension plans was the subject of an article written for Arizona Medicine by Mrs. Charles von Pohle, state legislation chairman. Deputy registrars were present at one Maricopa County meeting to re-register those members who wished to do so. Pima's chairman took a personal poll of physicians and their wives on their opinion regarding compulsory social security.

STUDENT NURSE LOAN FUND—This committee, under its new chairman, Mrs. Donald A. Polson has continued to progress. Of the fourteen girls who have received the loan four have graduated and have completely repaid their loan. This has enabled the committee to grant partial loans of $150 and $100 to a Spanish-American and an Indian girl respectively, both third-year students. At their convention meeting in April they chose five recipients from among the largest number of applications yet received. This they feel is due to the nurse recruitment program and increased interest through knowledge on the part of girls, councelors and parents.

TODAY'S HEALTH—544 subscriptions have been sold in Arizona, topping our quota by 120 subscription, and last year's total by 146 subscriptions. Yuma county oversold their quota by 250% and Gila county by 258% and placed in the national "More Exclusive Club". Pima, and Yavapai placed in the "Exclusive Club".

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The chairmen of this committee on the county levels have done excellent work under Mrs. James C. Soderstrom, state chairman and with a little more cooperation from members and their husbands, every county would have reached the "More Exclusive Club". There is no better or easier way to promote good health education than by the wide dissemination of this fine magazine, which won two awards at the American Institute of Graphic Arts in New York.

BULLETIN—This year the county presidents were requested to ask that each member of their board of directors and chairman of committees subscribe to the Bulletin, to be used as a source book of information. This has been done and our total number of subscriptions is 82.

PUBLICITY—The chairman of this committee, Mrs. Ashton B. Taylor, has seen to it that there has been an article on some phase of the auxiliary program, written by a board member, in each issue of ARIZONA MEDICINE. She has clipped all news pertaining to state auxiliary and sent it to the historian, Mrs. Benjamin Herzberg. She had excellent publicity for the state convention.

REVISIONS—This year our CONSTITUTION AND BY-LAWS have been revised by a capable committee of three past-state presidents, Mrs. Jesse D. Hamer, chr., Mrs. Thomas A. Bates, and Mrs. William F. Schoffman. The revisions were read and accepted at the convention and, will be printed during the summer.

AMERICAN MEDICAL EDUCATIONAL FOUNDATION—Mrs. J. B. Tucker, chairman of this committee sent 'mite' boxes to every physician's wife in Arizona with 'A Dollar per Member Eliminates Federal Aid' printed on the front of it. A letter of explanation accompanied the box. $229.17 was received from six county auxiliaries and members-at-large.

SUMMARY—The above report shows the fine work that has been done throughout the state. Without exception, I can say that, as president, I have had the utmost cooperation from every member of my board and the presidents of the county auxiliaries. It is impossible for me to adequately express my sincere appreciation of their help, understanding and encouragement. I also wish to say "Thank you" to Bob Carpenter and the girls in his office and to Mr. McMeekin and Miss Wax of ARIZONA MEDICINE for their willing and efficient aid, and to the Arizona Medical Association for their generous backing. To Clarice Hamer, too, I am most deeply indebted. She was always ready to answer my many questions, soothe my troubled spirit or give a calm word of advice. Truly I have been the most favored of all presidents in having so many EXCEPTIONAL people with whom to work. Thank you EVERYONE.

Respectfully submitted,
Rowena A. Enfield
Pres., Woman's Auxiliary
to the Arizona Medical
Association, 1953-1954.

CONGRATULATIONS ON FIRST PRIZE

Mrs. George S. Enfield,
Pres., Ariz. Medical Aux.
335 W. Cambridge
Phoenix, Arizona

Congratulations to your state auxiliary as you have won the first prize in the subscription contest in group II. The forty dollar prize was presented at the Today's Health workshop on June 21, at the San Francisco Convention.

Robert A. Enlow,
Dir. of Circulation Today's
Health Magazine

(Copy of telegram received by Mrs. Enfield)

PHENYLBUTAZONE IN RHEUMATOID ARTHRITIS. M. Pemberton, British Med. Jour., Feb. 27, 1954. The frequent reports of toxic effects from this drug have led many practioners to abandon its use. This author hopes "to demonstrate that this view is pessimistic; given adequate management the drug has a definite place in the treatment of some forms of arthritis." His report covers 210 patients to whom phenylbutazone was given. It would seem that an average incidence of reactions will be 30 to 40%. He considers that given adequate medical supervision, the toxic effects should be sufficiently minimized. Agranulocytosis is the most dangerous reaction, but even here the patient may be willing to take the risk in order to obtain relief from a painful and crippling disability. The reactions, doses and precautions in using the drug are discussed.

RECOMMENDED READING IN CURRENT MEDICAL JOURNALS

Angina Pectoris,—Treatment of. Another excellent review of 172 published articles,—made by Uricchio and Calenda, in New Eng. Journ. of Med., Oct. 22, 1953. Covers the medical treatment by nitrites, xanthines, papaverine, androgens, khellin, medical thyriodectomy, anticoagulants, ganglionic blocking agents, diet and other measures; surgivel treatment by synpathectomy, posterior rhizotomy, paravertebral alcohol injection, stellate ganglion block, pericoronary neurectomy.

Polyps of Colon and Rectum. By Swinton and Doane, of Lahey Clinic, Boston. In New Eng. Journ. of Med., Oct. 22, 1953. A timely paper based on the facts that polyps of colon and rectum occur frequently, are true tumors and forerunners of one of the most common forms of cancer.

Chronic Gastric Ulcer. Swinnerton and Tanner. Brit. Med. Journ., Oct. 17, 1953. Report on 498 patients treated in London Hospitals, comparing 262 treated medically with 254 treated surgically. Evidence favors surgical treatment, so far as permanent good results are concerned.

Rheumatism and Arthritis. The Tenth Rheumatism Review of American English literature of the past ten years. Runs in two issues of Annals of Internal Medicine, Sept. and Oct., 1953. Any doctor treating arthritis or rheumatism needs to read this review. The review fills most of the space in these two issues of the Annals, including a bibliography of 2256 articles.

HEAD INJURIES. Analysis of 1400 cases of acute head injury is well discussed by Rowbotham and associates in British Med. Journ., for March 27, 1954.

TREATMENT OF PULMONARY TUBERCULOSIS. Diseases of the Chest, April, 1954. For the busy practitioner trying to keep abreast of the fast changing picture of treatment of tuberculosis, three articles in this journal will be of interest. James J. Waring of Denver writes on "The Current Treatment of Pulmonary Tuberculosis"; Sweany and Perez write on "The Present Status of Isoniazid in the Treatment of Pulmonary Tuberculosis"; and Cheifetz and associates write on "Iproniazid in Pulmonary Tuberculosis."

TUBERCULOSIS. Modern Management of the Public Health implications of recent advances. C. Gerald Scarborough, Calif. Med., March, 1954.

SIMPLE SKIN PATHOLOGY. Review by John O. Oliver, in British Medical Journ., Feb. 27, 1954. Anything which simplifies skin pathology is good reading.

INFANTILE CORTICAL HYPEROSTOSIS. Sidbury and Sidbury, The New Eng. Journ. of Med., Feb. 25, 1954. Good article on this interesting condition.

PYROMEN THERAPY IN DERMATOLOGY. James K. Howles, M.D., The Journ. of the La. State Med. Soc., February, 1954.

ACUTE MYOCARDIAL INFARCTION. California Med., April, 1954. A discussion of certain controversial issues, by Howard B. Burchell, of the Section of Medicine of the Mayo Foundation, lists eight problems that are in dispute, viz: (1) classification of the severity of the attack at the time of the initial examinations; (2) whether hospitalization or home care is better; (3) the type of rest and the length of time that the patient should be restricted to his bed or room; (4) indications for anticoagulant therapy; (5) indications for oxygen therapy; (6) indications for pressor drugs, such as norepinephrine; (7) indications, if any for transfusions; (8) indications for use of special medication, such as atropine, papaverine, aminophyllin, pronestyl, quinidine, digitalis.

OCCUPATIONAL ASPECTS OF COCCIDIOIDOMYCOSIS. Calif. Med., April, 1954. "Physicians who treat patients with coccidioidomycosis may be called on from time to time to decide whether or not a case may be of occupational origin." This statement introduces a very good article by Norman E. Levan. The criteria in determining whether or not an infection is of occupational origin require careful consideration and include evidence that the patient was free of the disease prior to the suspected employment exposure, which evidence may not be obtainable; there should be no chronologic discrepancy between the alleged exposure period and the onset of the disease; the working conditions should be clearly productive of possible infecting exposures; and extra-employment exposures to an equal or greater degree than work exposures should be reasonably excluded or evaluated.

SYSTEMIC LUPUS ERYTHEMATOSUS. Edmund L. Dubois, Calif. Med., March, 1954. Systemic lupus erythematosus is a relatively common disease. The disease has no classic pattern. The only positive finding is the typical "L.E." cell. With early diagnosis and adequate therapy the lives of many patients may be prolonger by the use of ACTH and cortisone.

TESTICULAR TUMORS. Stanford Medical Bulletin, February, 1954. Interesting report of six new cases of retrogression of primary testicular tumors with simultaneous progression of metastases. Beautifully illustrated with photomicrographs. Rather, Gardiner and Frerichs, of the Dept. of Pathology, Stanford Medical School.

COCCIDIODOMYCOSIS. Treatment of a disseminated involvement with Stilbamidine; case history. Gephardt and Hanlon, The Journ. of the Okla. State Med. Assn., March 1954.

THYROTOXICOSIS. Three articles well worth attention of the studious practitioner, appear in the British Medical Journal of Feb. 20, 1954. E. J. Wayne writes on Diagnosis of Thyrotoxicosis; Galbraith and associates on Iodothiouracil in Treatment of Toxic Goitre; Goodwin and associates on Long-term Therapy with Thiouracil Compounds.

UTERO-TUBAL INSUFFLATIONS. Albert Sharman, British Medical Journ., Jan. 30, 1954. Lessons gained from 4,000 insulfflations.

ADVANCES IN RADIATION THERAPY. L. H. Garland, M.D., San Francisco. Stanford Medical Bulletin, May, 1953.

After outlining the "experimental, technical, mechanical, clinical, biological" phases of radiation therapy, this author makes some pertinent comments of general interest.

"Murphy and Reinhard, in a paper dealing with 1000 kv, 400 kv. and 200 kv. x-ray therapy, conclude that: comparisons of skin and subcutaneous reactions produced in the same patient by 200 kv. and 1000 kv., show that for equal total dosage and equal treatment time, the immediate reactions were similar in a large percentage of persons." He then discusses the claims for superiority of supervoltage over conventional (200 kv.) treatment, and concludes, "it is my own clinical belief that in terms of physical roentgens there appears to be less skin effect with super voltage, but in terms of biological roentgens there is no such differences."

"Recent advances in radiation therapy serve to remind us that effective treatment still depends primarily on the trained clinical radiologist and only secondarily on his equipment. Most cases of cancer can and should be treated on the local level and with orthodox equipment in order to assure (a) prompt treatment and (b) economy and ease of mind for the treated person. He or she can stay at home, or even at work, and avoid the fiscal and psychic trauma of distant care."

(NOTE: That is good sense from a top drawer radiologist. There are at least three places in Phoenix and at least one in Tucson, equipped with quarter million (250 kv.) x-ray machines, including the new laboratory in St. Joseph's Hospital, and a half dozen others in Phoenix, Tucson, Mesa and Yuma, with 200 or 220 kv. units, which Garland and most other radiologists consider adequate for 90 per cent of cancer cases—provided the radiologist is competent. So keep your patient at home and save money.

ABSTRACTS

HEADACHE. "Twenty five per cent of patients presenting themselves to a physician have some form of headache as a chief complaint." This statement introduces a very excellent paper by Henry L. Williams, of the Section of Otolaryngology and Rhinology, Mayo Foundation, in The Illinois Medical Journal, February, 1954. The paper is entitled "The Treatment of Certain Common Forms of Headache Confused with Sinus Headache." Patients use the term "headache" to describe two separate sensations; one is a sense of constriction, weight, fullness or expansion in the head; the other is pain felt to be within the head. After differentiating between the two sensations by careful questioning—the pain itself is of two types, viz., superficial and deep. The author discusses the clinical pattern of pressure sensations, the clinical pattern of the neuralgias, the clinical pattern of fibrositis of the neck and head. Under the headaches associated with deep referred pain, he discusses sinus headache, headaches arising from muscular structures about the head devotes quite a little space to myalgia and its treatment. Headaches arising from vascular structures about the head is given quite a little space. He discusses the differentiation between migraine and histamine cephalalgia, with seven characteristics of each outlined. He concludes: "It is felt that a careful differential diagnosis of these headaches (commoner types) is important because they comprise the large majority of headaches, and if they are properly differentiated, they will yield to simple office treatment well within the reach of any practicing physician."

LIVER FUNCTIONS TESTS. A refresher course by N. F. Maclagan, M.D., D. Sc., F.R C.P., F.R.I.V. British Medical Journ., April 17, 1954—Good stuff.

CARDIO PULMONARY FUNCTION. Symposium of four papers in diseases of Chest for March 1954.

PHENYLBUTAZONE IN GOUT. An excellent discussion by Johnson and others, in The New Eng. Journ. of Med., April 22, 1954, with the following conclusion: "Despite its favorable therapeutic effects, we believe the potential toxicity of phenylbytazone should limit its use to cases of gouty arthritis that are resistant to other established forms of treatment."

ARIZONA MEDICINE

Journal of ARIZONA MEDICAL ASSOCIATION

VOL. 11, NO. 8 AUGUST, 1954

TABLE OF CONTENTS

OFFICERS

COUNTY MEDICAL SOCIETY OFFICERS, 1954 DIRECTORY 2A
ARIZONA MEDICAL ASSOCIATION, INC., DIRECTORY 6A
WOMAN'S AUXILIARY DIRECTORY 6A

ORIGINAL ARTICLES

AMOEBIC DYSENTERY 287
Paul Williamson, M.D., Osawatomie, Kansas
PULMONARY EMPHYSEMA 289
Drs. Harold G. Trimble and Gerald L. Crenshaw, Oakland, California
PULMONARY HYALINE MEMBRANE – A CAUSE OF RESPIRATORY FAILURE IN THE NEWBORN 292
Howard M. Purcell, Jr., M.D., Phoenix, Arizona

MEDICAL PROBLEMS

PHOENIX CLINICAL CLUB 295
Philip E. Rice, M.D., Glendale, Arizona

BASIC SCIENCE SEMINAR

THEORIES OF NARCOSIS 300
Roger Seyferth, M.D., Tucson, Arizona

THE PRESIDENT'S PAGE

SCIENTIFIC ASSEMBLY COMMITTEE MEETING 306
Oscar W. Thoeny, M.D., President, Arizona Medical Association

EDITORIAL

CORTISONE AND EMERGENCY SURGERY 307

TOPICS OF CURRENT MEDICAL INTEREST

RX., DX., AND DRS. 308
Guillermo Osler, M.D.
NEWS ITEM ON NEW MEDICAL SECRETARIAL SERVICE 304
AMERICAN MEDICAL ASSOCIATION AT SAN FRANCISCO 311
Robert Carpenter, Executive Secretary, Arizona Medical Association
BOOK REVIEW – The Jealous Child 312
Charles P. Neumann, M.D., Tucson, Arizona
INTERESTING TOPICS – Recommended Reading In Current Medical Journals 313 & 321
W. W. Watkins, M.D., Phoenix, Arizona
ORGANIZATION PAGE 314
Norman A. Ross, M.D., Phoenix, Arizona
ARIZONA PHARMACEUTICAL PAGE – Custom Made or Ready Made 316
Doctor Joseph A. Zapotocky, Tucson, Arizona
MEETING NOTICE 320
BOARD OF MEDICAL EXAMINERS 321

WOMAN'S AUXILIARY

WOMAN'S AUXILIARY TO THE A.M.A. CONVENTION REPORT 317
Mrs. Brick P. Storts, President, Woman's Auxiliary, Tucson, Arizona

DIRECTORY

LABORATORIES 21A
DRUGGISTS DIRECTORY 22A
SANATORIUM DIRECTORY 24A
PHYSICIANS DIRECTORY 27A

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AMOEBIC DYSENTERY

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AMOEBIC dysentery has been diagnosed with increasing frequency during the past few years. It is probable that there has been an actual increase in the number of cases due to conditions arising during the war, but it is also true that more accurate diagnosis frequently plays a part. The disease is seldom difficult of diagnosis and will, in most instances, respond well to modern treatment.

Natural History. This is infestation of the intestinal tract with Endamoeba histolytica characterized by bouts of diarrhea and slow exhaustion of the patient. The amoeba gains entrance to the body in cystic form usually borne on foodstuff contaminated with human feces. Perhaps one quarter of those who ingest the cysts show symptoms of the typical disease. Primary lesions are confined to the colon, usually the caecal area. The amoeba tends to burrow into the mucosa of the bowel and to cause undermining ulcers. These is little toxicity encountered from the protozoan itself, the intensity of the disease frequently being determined by secondary invasion of the lesions.

Intermittent, solicky pains, usually in the right lower quadrant are first seen. As the lesions are invaded by other bacteria and become more protean in character and distribution, intermittent bouts of bloody diarrhea with tenesmus of moderate degree occur. Stools usually show some formed elements, much mucous, and streaks of bright red blood. They are very offensive but no characteristic odor is present. A degree of constipation unusual to the patient may occur between bouts of diarrhea.

There is a tendency toward spontaneous remission and the patient may become relatively symptom free only to have the entire diarrheal episode repeated at each dietary indescretion. Spontaneous cure has not been authoritatively reported. It is worthy of note that the appetite is relatively unchanged except in the most severe cases. Lassitude and malaise occur as a result of the anemia and the toxic products of secondary invaders. In the absence of intense secondary infection, the temperature, pulse, and blood pressure are little changed.

While many patients become relatively asymptomatic for long periods of time, a general downhill course is the rule with chronic exhaustive states inviting catastrophic secondary disease.

The parasite is rarely found in children and there are not a great number of cases reported in women. Males between 20 and 35 are usually affected. The vermiform appendix may be invaded and amoebic disease of the appendix is counted rare, but occasionally seen.

Specific Inquiries to be Made. One should question the patient in some detail about the onset of the disease. An explosive onset without any previous symptoms, while possible, mitigates against amoebic dysentery. Characteristically, the pains start in the right lower quadrant and precede the onset of diarrhea by one to three days. They are, at first, evanescent and difficult to attribute to any specific disease. The

Diarrhea begins mildly and becomes more intense over a period of several days to a week. From the first there is some bright red blood and much mucous present. The amount of blood is likely to increase and, although frank hemorrhage is rare, it can occur.

Ask particularly about appetite. It is seldom much disturbed during the initial period of the disease and this finding can be of much help in diagnosis. Also inquire about headache. It is seldom present except in the presence of severe dehydration or secondary infection. Few other diarrheal diseases show this characteristic.

Are there other cases of similar disease in the area? The patient, particularly in a rural section, will probably know. Sporadic cases of amoebic dysentery are found, but not as frequently as one might be led to suppose. The author has never seen a single case but what two or three more were found in the area within a month.

Physical Points to be Determined. The patient will usually be a male between 20 and 35. Except in cases of long standing, he will probably look surprisingly well for a person who has the symptoms he recounts. The temperature, pulse, and blood pressure will probably deviate little from the normal. These are valuable characteristics in diagnosis for few other diarrheal diseases exhibit these findings.

The abdomen will usually appear grossly normal. No abnormal intercostal breathing will occur, the abdominal and diaphragmatic musculature being used in a perfectly normal way. No muscle rigidity will be found although the patient usually guards against deep palpation over the cecal area. Tenderness may be found throughout the area of the colon but is usually most marked over the right and left lower quadrants. Rebound tenderness and Rovsing's sign are absent. There is no epicritic hyperesthesia and no Psoas sign. Percussion is frequently tympanitic over the gas filled colon, and, needless to say, peristaltic sounds are usually accentuated.

These are more or less protean findings in abdominal disease. To sum up, the findings are usually those of a moderate inflammatory process involving the cecum and sigmoid and with colonic tenderness through the course of the organ.

Other Procedures. Look for the amoeba. Do not be frightened away from the microscope by tales of extreme difficulty in identifying the parasite. With an applicator stick, pick up a small amount of mucous or mushy stool. Place this on a slide and add a small amount of warm (NOT HOT) saline. Cover with a cover slip and examine under a high, dry lens. A heated penny placed at one end of the slide will keep the specimen warm. Any doctor can identify a motile amoeba. If the amoeba has in its cytoplasm ingested red blood cells, you have your diagnosis. Failing to find the parasite the first time, try again several times. E. histolytica is the most rapidly moving amoeba found in the intestinal tract. E. coli is very sluggish and puts out pseudopods slowly. E histolytica moves rapidly for an amoeba and is in constant motion. This is not diagnostic, but can give you a good hint. In more chronic cases, a sample of formed stool should be sent to a reliable laboratory for detection of cysts.

Pitfalls. Occasionally a case will be seen with an explosive onset resembling (and, in fact, being) acute abdominal disease. More often a patient is seen early in the disease and is given symptomatic treatment which promptly gives him relief. Soon he is back again. This goes on until someone takes time to question and examine him, when a typical story is elicited.

The early stages of amebiasis may resemble appendiceal disease. Differentiation, if thought of, is not difficult.

Treatment. The proper use of modern antibiotics — particularly aureomycin and terramycin — will control secondary infection and do much to aid in eradication. The amoeba frequently may be eradicated by use of Milibis. Treatment results are good but by no means perfect. There is little agreement as to optimal dosage schedules.

It is wise to use small bland feedings quite frequently while administering the drugs. Nausea, if present, may usually be controlled by tincture of belladonna and an antacid such as amphojel.

Supposedly about 10 percent of our population harbor E. histolytica. The presence of cysts in the stool does not mean that all intra-abdominal symptoms (or any of them) a due to the presence of the parasite.

One should certainly remember that symptomatic relief does not indicate cure. Repeated stool examinations negative for the parasite, are fairly reliable. Under no circumstances should such a patient be dismissed without provision being made for periodic checks over a time of several years.

PULMONARY EMPHYSEMA*

Its Medical and Surgical Management

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A male child born today can expect to live to be 69 years of age. A female child born today can expect to live to be 72 years of age. Estimated from the 1950 census, a total population of 150,700,000 persons of all ages in the Continental United States, 12,270,000, or 8.1 per cent, were 65 years of age or over. Three per cent of these, at the age of 65, are living in various kinds of institutions, and less than 10 per cent of those 85 or over.(1) Thus, almost all of the older persons in the United States are living outside of institutions and, even among those who are 85 years and older, slightly more than 90 per cent are living independently or with their family or friends. Degenerative diseases must, therefore, be of practical importance to the practicing physician. Among the most common of the degenerative diseases of the lungs is pulmonary emphysema. According to the classical descriptions, emphysema is divided into two main types: obstructive or infectious, and nonobstructive, often called senile.

The first type is infectious in nature with interference with the free flow of air between the alveolus and the major bronchi, such as in bronchiectasis, bronchiolitis, etc. In this condition there may be a complete obliteration of the smaller bronchi so that air cannot reach the alveoli,(2) and the lungs fill through the air-drifts of Van Allen and Lindskog(3, 4) and through the small segments of the lobe that have not been destroyed by infection. In this type of emphysema the bronchial arterial system is greatly increased in size and there is no loss of lung structure. There is work pointing to the fact that in grossly bronchiectatic areas the pulmonary arterial system shunts blood away from these regions into the normal functioning segments. This disease, when it is diffuse, is not amenable to surgical treatment but is best handled by medical measures.

The second type of emphysema originates in vascular disease of the bronchial arteries, which may be arteriosclerotic, vascular spastic, or any type of vascular disease affecting systemic blood vessels as the bronchial arteries are branches of the aorta. This bronchial arterial disease, in turn, affects the pulmonary arterial system through its vasa vasorum causing, in advanced cases, complete obliteration of the main stem pulmonary arteries and veins. Due to the nutrient nature of the bronchial arterial system, disease here causes loss of lung structure, such as the alveolar walls and actual loss of the major bronchi themselves in advanced cases — thus producing real loss of lung tissue, that is, vanishing lung disease, or bullous degeneration, or "cotton-candy lung." This process, occurring slowly, allows for replacement of lung tissue with proliferating collagen, similar to the process in the heart following coronary arterial obliteration. This pulmonary tissue is altered by the mechanics of respiration so that these inelastic stretched cysts rob the remaining good lung of inspired air and occupy the greater portion of space within the hemithorax, interfering with the function of the remaining good lung. In certain patients we have seen three segments of a lobe occupy almost the whole hemithorax. In contradistinction to the air-trapping phenomenon seen in huge subpleural blebs, there is no shifting of the mediastinum nor other evidence of increased pressure within these degenerated areas. At surgery, the pressure within these specimens is the same as that of the bronchus.

This latter type of emphysema is much more common than the one first mentioned, and occurs in all age groups though it is more prevalent in the older groups. Clinically, these patients have dyspnea on exertion only and are relieved by rest. Often there is no history of asthma or repeated respiratory infections. In stethoscopic examination of these patients there is an absence of breath sounds and one gets the

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impression, in listening, that very little air is moving in and out of the bronchial tree in spite of the patient's labored efforts to breathe.

Fluoroscopically, there are often large areas of bullous degeneration. The diaphragm is flattened with little or no movement, denoting loss of elasticity of the lung and its inability to suck the diaphragm back to its normal relaxed dome-shaped position. On the roentgenogram, one notices an increase in antero-posterior diameter and a loss of lung markings. It is impossible to tell from the X-ray how much functioning lung remains in the chest. In bronchograms, lipiodol fails to fill the bronchi in the degenerated areas. Angiography reveals the degree of loss of pulmonary arteries and veins. This procedure is probably the best guide in determining the amount of functioning lung remaining.

Early manifestations of this disease are best seen on the X-ray film, where it is represented by an increased antero-posterior diameter of the chest and increased translucency in the lung fields.

Our concept of the etiology of this type of emphysema arose from observations made at the operating table. It was encountered during surgery for other disease, such as carcinoma, bronchiectasis, etc. This abnormal pathological-physiological state can only be seen at thoracotomy. Its observation and meaning are completely lost when the specimen is removed and forwarded to the pathological laboratory. Only when the diseased lung is still attached to its bronchi and blood vessels can one understand the principle of air-robbing and the loss of vascularity, both nutrient and ventilatory. It is easy to see why these patients are dyspneic because, on inspiration, the air flows readily into the degenerated areas and less into the good functioning lung.

At times it is extremely difficult to differentiate preoperatively between the dyspneic patient suffering from bronchospasm and bronchiolitis and the dyspneic patient suffering from dissolution and absorption of the actual lung structures due to disease affecting the bronchial arteries. A history of asthmatic attacks and repeated bronchial infections will make one feel that he is probably dealing with the first mentioned disease, while the patient with bronchial arterial obliterative endarteritis presents only with dyspnea on exercise. In this condition the symptoms are difficult to differentiate from those of cardiac failure.

X-rays and bronchograms will aid in the diagnosis of the first mentioned disease, while in the latter, if there are areas of bullous degeneration, one may well suspect bronchial arterial disease. In the former, the bronchial arterial system, in most cases, is increased so that surgery to attain better nutrient systemic blood supply and improve ventilation is contraindicated, while in the latter it is indicated.

Surgery for bronchial arterial obliteration consists of: segmental or lobar resection of the degenerated areas; a sympathectomy to increase the flow in the remaining bronchial arterioles; and removal of the parietal pleural barrier, as well as denuding of the endothoracic fascia so as to approximate the visceral pleura to the intercostal muscles and periosteum, to stimulate the ingrowth of collateral circulation from the chest wall for the purpose of preventing further destruction of the architecture of the lung.(5, 6)

In resecting these degenerated segments or lobes it is important to sever the bronchus close enough to the hilum so that the bronchial arteries are sufficiently viable to allow healing of the bronchial stump. The incidence of bronchopleural fistula in these patients has been high enough that all efforts must be made to utilize this principle, as well as to bring in a pleural or pericardial flap containing a blood vessel to facilitate healing. Such a flap has been described by Dr. Lyman Brewer.

Another altered pathological-physiological state found in these lungs at surgery is a paucity or absence of bleeding when one cuts deeply into these degenerated areas. This is especially well seen in areas that have not undergone complete bullous degeneration. This phenomenon can only be explained by the destruction of both the pulmonary ventilatory system and the bronchial arterial nutrient system. As the bronchial arteries supply the vasa vasorum of the pulmonary arteries and veins, disease in this system will, in turn, affect the other, causing the obliteration of both. Diseases inherent in the pulmonary arterial system, such as embolization, arteriosclerosis, etc., causing a decrease in its function will further its complete obliteration when the bronchial arteries are subjected to obliterative endarteritis.

In the main, patients who have come to surgery with this disease have been respiratory

cripples, in whom ventilatory studies could not be obtained because of their marked dyspnea. However, they have tolerated this type of surgery surprisingly well due to the positive pressure anesthesia.

The results have been gratifying, in that many of these respiratory cripples have been able to return to full or part-time productive activity.

Medical treatment precedes and follows the surgical measures, to promote longer lasting results.

First and most important in treatment is the education of the patient. He must be given a reasonably simple explanation, in nontechnical language, of what we are trying to achieve.

In obstructive or infectious emphysema, bronchospasm and drainage must be improved, and air-trapping reduced to lower the residual air.(7) In all cases, the patient must realize that he cannot smoke at all. Routine natural heliotherapy is used. Physical activity must be carefully regulated. These procedures take a long time and persistent effort on both the part of the patient and the physician.

Overweight must be corrected. Eating habits must be adjusted, and a hygienic routine closely adhered to. This does not mean a rocking chair type of existence. These patients are always better off with the proper amount of exercise and exertion, but the speed, extent, and duration of exercise must always be adequately controlled.

It is important that these patients get away from a costal type of breathing and use as much diaphragmatic function as is available. A simple explanation and a little practice can bring this about. We have been very pleased with the results of intermittent positive pressure breathing combined with a bronchodilator.(8) The type of apparatus we have found most satisfactory is the Bennett valve used with 100 per cent oxygen, though occasionally air will suffice, with Isuprel as a bronchodilator. When the secretions are thick and foamy, 50 per cent alcohol as an aerosol is helpful. A surface wetting agent, such as Alevaire, may at times be useful combined with intermittent positive pressure breathing.(9)

Pneumoperitoneum will be helpful when the diaphragms are markedly depressed.(10) Used for this purpose, of course, it is quite different from its use in tuberculosis, where a relatively high rise in the diaphragm for the purpose of pulmonary relaxation is to be obtained. In the treatment of emphysema, a simple and rather mild cupping of the diaphragms is all that is required. Too energetic use of pneumoperitoneum in emphysema will easily throw the patient into heart failure. While this procedure of using pneumoperitoneum is effective, it is a bit tricky in emphysematous patients and must be watched carefully. Its use for this condition must be understood and the difference from its use in tuberculosis must be clearly outlined.

The greatest problem in emphysema is to be able to recognize it early, not in its end stages. We, ourselves, are just becoming aware of this urgent necessity. There are no long-time studies which will tell us how fast these processes will progress, and at what point one must take steps before severe symptoms eventuate. We must, then, be alert to the earlier and rather meager manifestations of emphysema in our patients. While we must avoid overtreatment, we must attack the disease early rather than late, and attempt to control the degenerative process rather than try to salvage respiratory cripples. However, even in the later stages, these procedures are worth while. As this new vista in emphysema is unfolding, prevention of this disease, or at least its early control, is the goal for which medicine should now be striving.

REFERENCES

1. Krag, C. L.: Facts Regarding Older Persons, Correspondence, J.A.M.A. 154: 1114, March 27, 1954.

2. Churchill, E. D.: The Architectural Basis of Pulmonary Ventilation, Ann. Surg. 137: 1, 1953.

3. Van Allen, C. M., and Lindskog, G. E.: Collateral Respiration in the Lung: Role in Bronchial Obstruction to Prevent Atelectasis and to Restore Patancy, Surg., Gynec. & Obst. 53: 16, 1931.

4. Van Allen, C. M., and Lindskog, G. E.: Collateral Respiration: Transfer of Air Collaterally between Pulmonary Lobules, J. Clin. Investigation 10: 559, 1931.

5. Crenshaw, G. L., and Rowles, D. F.: Surgical Management of Pulmonary Emphysema, J. Thoracic Surg. 24: 398, 1952.

6. Crenshaw, G. L.: Degenerative Lung Disease, Dis. of Chest, 25:427, 1954.

7. Trimble, H. G., and Kieran, J.: A Primer of Pulmonary Function, California Tuberculosis and Health Assn., 1954.

8. Trimble, H. G., and Kieran, J.: Pulmonary Emphysema Treated by Intermittent Positive Pressure Breathing: A Clinical Study, J. Am. Geriatrics Soc. 2: 102, 1954.

9. Hansen-Pruss, O. C., and Charlton, J. D.: Emphysema in the Aged, J. Am. Geriatrics Soc., 2: 153, 1954.

10. Zak, G. A., and Southwell, N.: An Investigation into the Treatment of Pulmonary Emphysema with Artificial Pneumoperitoneum, Acta med. Scandinav. 147: 79, 1953.

PULMONARY HYALINE MEMBRANE — A CAUSE OF RESPIRATORY FAILURE IN THE NEWBORN*

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INTRODUCTION

THOSE physicians who are responsible for the care of newborn infants have seen respiratory distress and respiratory failure develop during the first few hours or days after birth. Microscopic examination of the lungs of these infants frequently reveals a pink staining material lining the alveoli and the smaller bronchioles—this is the so-called hyaline membrane.

This pulmonary hyaline membrane has been studied extensively during the past few years (1-8) and it is the purpose of this communication to present the results of these investigations as well as the current thoughts regarding treatment.

The photomicrographs used in this paper were prepared from pathologic material collected while the author was connected with the Department of Pediatric Pathology, University of Minnesota.

INCIDENCE

Pulmonary hyaline membranes are a frequent finding in the lungs of infants who die during the first few days of life. Miller(4) said that 90% of all infants over 1000 grams birth weight dying within the first 48 hours, excluding those infants having a serious developmental defect and those subjected to significant trauma, have pulmonary hyaline membranes. Clement Smith(7) said that in his series of 500 autopsies on newborns, pulmonary hyaline membranes were present in 50% of prematures and in 25% of the full term infants. In the newborn, this malady has been found to occur almost exclusively in those infants who are premature, post-mature or born by caesarean section. It is rarely seen in the full term baby delivered without complications by the vaginal route.

CLINICAL FEATURES

Clinically, those newborn infants having pulmonary hyaline membranes are able to establish respirations without difficulty. The cry and color usually are good immediately after birth. However, during the ensuing few hours or as late as the 3rd or 4th day diminishing respiratory exchange and labored breathing appear. Auscultation of the chest may reveal the breath sounds to be "tight" and harsh, but usually no rales or ronchi are heard. The respiratory distress may be progressive and the retractions may become extreme. Death may occur from respiratory inadequacy and physical exhaustion during the first few days of life.

PATHOLOGIC FINDINGS AND PATHOGENESIS

The primary pathologic findings are limited to the lung. Grossly, the lungs usually show evidence of incomplete expansion. Microscopically, most of the lung is atelectatic with scattered areas of globular emphysema (fig. 1).

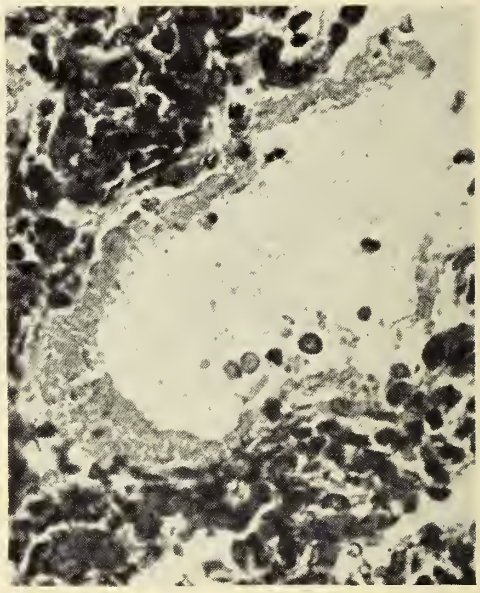


Figure 1. Photomicrograph (X 400) showing hyaline membrane lining the alveolar walls. From lung of male infant dying at 22 hours of age. Birth weight 2560 grams. Respiratory difficulty first noticed at age 5 hours.

Lining the walls of many of the alveoli and lying within the alveolar ducts is a pink-staining (with hematoxalin and eosin) homogeneous material—the hyaline membrane. This material is usually not present in the larger branches of the bronchial tree.

Farber and Sweet(9) in 1931 were the first to describe it and since it had a microscopic appearance and staining reaction similar to that of vernix caseosa, it was termed the "vernix membrane". Farber thought it was formed as the result of excessive respiratory activity en

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utero brought on by some complication of pregnancy and when the aspirated vernix was subjected to the mechanical effects of extrauterine respiration it became plastered around the walls of the alveoli. Miller(5) in 1949, on the other hand, thought it was not due to aspiration of vernix or amniotic fluid because cornified epithelial cells were not frequently associated with the membrane. He believed that it may represent a reaction to some injury of the epithelium of the air spaces and that this unknown etiologic agent may also be the cause of the premature delivery of the fetus whose lungs are so injured. He mentioned the similarity of this hyaline membrane to the membrane seen in the lungs of those patients dying of pandemic influenza and of rheumatic pneumonitis.

In 1951, Miller(3) reported on the formation of a hyaline membrane in rabbits dying following midcervical vagotomy. These vagatomized rabbits died spontaneously in from 3 to 25 hours after surgery, of respiratory failure caused by pulmonary edema. Thirteen of the 20 rabbits had a hyaline membrane lining of the alveoli but it was not seen in those dying in the first 4 hours. Nine of the 10 living longer than 11 hours showed the membrane. He used many staining reactions in attempt to identify the composition of the membrane and concluded from these studies that it may be due to pulmonary edema and that the same process may be the cause of the hyaline membrane in infants.

Blystad, Landing and Smith(2) in reporting their studies on 509 consecutive autopsies on newborns, state that hyaline membranes are not formed of vernix or meconium but of the concentrated protein of aspirated amniotic fluid. These authors were able to produce similar membranes experimentally by repeated intratracheal injection of small amounts of amniotic fluid into the excised respiratory tract of animals while the lungs were alternately expanded and contracted for one hour. They felt that previous efforts to produce it by similar technique had failed because inadequate time was allowed for the formation of the membrane.

The pulmonary hyaline membrane is not limited to the lungs of newborn infants. It has been described in association with uremia, heart failure, radiation pneumonitis, rheumatic pneumonia, and influenzal pneumonitis. It has been puzzling that such diverse conditions produce a similar microscopic finding in the lung, however, all of these conditions do have one thing in common. In each, the pulmonary alveoli are filled by a fluid which has a high protein content, yet which does not form significant amounts of fibrin and, therefore, does not organize. If, then, the water is absorbed from this fluid (and the lung is capable of absorbing water readily) the protein material is left behind as a sediment which coats the walls of the alveoli and smaller bronchioles. This layer of protein sediment stains pink and is what is described as the hyaline membrane.

The mechanism responsible for the presence of the fluid varies with the several disorders in which the membrane occurs. In the newborn infant, the source seems to be the amniotic fluid. This has raised the question of why do not all newborn infants have pulmonary hyaline membranes since it has been proven that intrauterine respirations occur normally(8), and therefore all fetuses have amniotic fluid within the lung. This is explained by the observations that the normal intrauterine respirations are shallow and the amount of amniotic fluid contained in each alveoli (fig. 2) is only a small fraction of the total volume of the alveoli after expansion occurs. It is only when deep intrauterine respirations occur that the alveoli become distended with amniotic fluid (fig. 3). When the water from this fluid is absorbed there is left behind a sediment which acts as

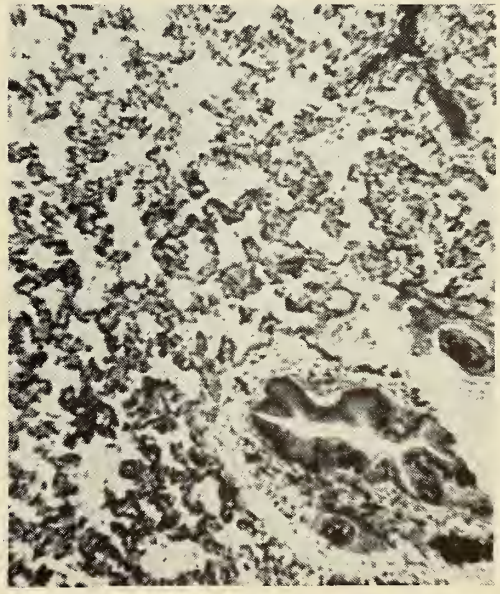


Figure 2. Photomicrograph (X 200) showing appearance of the normal fetal lung. The alveolar walls are separated by a small amount of amniotic fluid. From lung of stillborn weighing 4500 grams at birth.

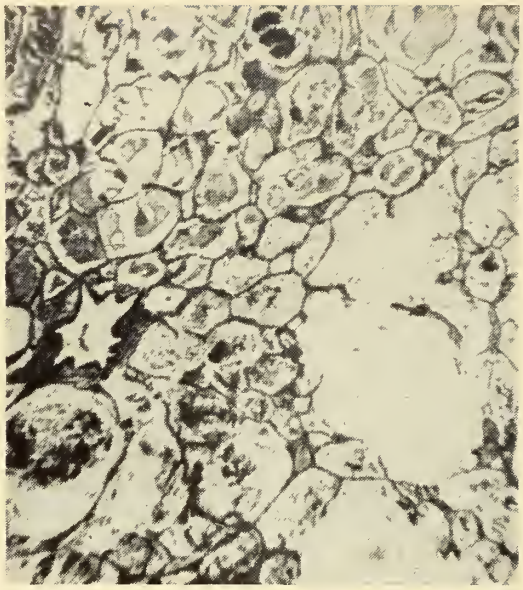


Figure 3. Photomicrograph (X 100) showing appearance of newborn lung after deep intrauterine respirations have occurred. The alveoli are distended and many are filled with amniotic fluid. From lung of a full term stillborn. Birth weight 3860 grams. Intrauterine cranial decompression was done because of congenital hydrocephalus.

a barrier to the transfer of oxygen from the air into the blood stream. In addition, some of the smaller bronchioles are blocked by this material resulting in patches of atelectases while some of the functioning areas become emphysematous.

Clinically, it has been noted that when the hyaline membrane is found in the newborn infant, that infant is almost always premature, postmature or born by caesarean section. As for the premature infant, those situations which are responsible for delivery to occur early, such as placenta praevia, premature separation of the placenta, etc., also may cause poor placental circulation. If the impairment is severe enough, fetal hypoxia occurs and deep fetal respirations begin, resulting in the aspiration of amniotic fluid. The small size of the premature infant probably decreases the "squeezing out" of fluids during passage through the vaginal canal and the weakness of the premature infant renders him less able to cough and remove material which may be present in the upper respiratory passageways.

The postmature infant also may begin deep intrauterine respirations and aspirate amniotic fluid. Senescent changes in the placental circulatoin may become severe and result in fetal hypoxia.

The infant born by caesarean section, obviously, is denied the "squeezing out" of fluids so apparent in the course of vaginal delivery but, in addition, he also may be subject to hypoxia. Experimental work has shown that incision into the uterine wall causes myometrial contractions which decrease the placental circulation. If the oxygen supply to the placenta and to the fetus is sufficiently impaired, deep intrauterine respirations may begin and aspiration of amniotic fluid occur.

TREATMENT

The most important phase of the treatment of the hyaline membrane in the newborn infant is directed toward the prevention of those factors causing prematurity, postmaturity, and the need for caesarean section. These problems, of course, are best understood by the obstetrician and will not be discussed here.

High oxygen content of the inspired air will give the infant a better chance of maintaining adequate oxygenation of his blood. Elevation of the foot of the crib and gentle suction of nose and pharynx will aid in the removal of secretions from the upper respiratory passageways. These have been standard treatment of respiratory difficulty of the newborn for some time.

But perhaps of greater importance is the maintenance of a high moisture content of the inspired air. High humidity will combat drying of the intrapulmonary material, whether it is aspirated fluid or normal secretions, and thus facilitate their removal either by cough or by the action of the tissue macrophages. This phagocytic process may explain why hyaline membrane has been described but rarely in the lungs of newborn infants living as long as 4 or 5 days and suggests that if the infant can be kept alive this long he will probably recover from this condition.

High humidity can be furnished by use of a simple device which can be set up in any hospital having incubators and oxygen equipment. A DeVilbiss nebulizer is taped to the inside of an incubator. The hole in the bulb of the nebulizer is plugged by a cork through which is inserted an intravenous needle. The needle is connected to a bottle of distilled water by means of standard intravenous tubing. The rate of flow of the distilled water must be so regulated that the water level in the bulb of the nebulizer is maintained at about ⅓ full. An oxygen tank is attached to the nebulizer by means of the usual tubing and allowed to run at about 5 liters per minute. When the set-up

is operating properly, a cloud of nebulized moisture resembling fog can be seen issuing from the nebulizer. . Such an apparatus can give a relative humidity of over 90% in an incubator.

Recently, certain detergents have been added to the nebulizer in an effort to further liquify the intrapulmonary contents. Early reports(10) have been enthusiastic and detergents may prove to be a genuine aid in the treatment of the hyaline membrane.

SUMMARY

Certain newborn infants develop respiratory distress during the first few hours or days of life.

Microscopic examination of the lung frequently reveals a pink-staining, homogeneous substance lining the walls of the alveoli and smaller bronchioles—the hyaline membrane.

This membrane apparently represents a sediment which remains after water has been absorbed from amniotic fluid.

Newer concepts of treatment attempt to lessen drying of the intrapulmonary material by use of increased moisture in the inspired air of the infant.

A simple apparatus consisting of a standard nebulizer and oxygen equipment has been described which can be utilized to increase the humidity in an incubator.

BIBLIOGRAPHY

1. Behrle, F. C., Gibson, D. M. & Miller, H. C.: Role of hyaline membranes, blood, exudate, edema fluid and amniotic sac contents in preventing expansion of lungs of newborn infats. Pediatrics. 7:782-792 (June) 1951.
2. Blystad, Wilhelm, Landing, B. H. & Smith, C. A.: Pulmonary hyaline membranes in newborn infants. Statistical, morphologic and experimental study of their nature, occurence, and significance. Pediatrics. 8:5-21 (July) 1951.
3. Miller, H. C., Behrle, F. C. & Gibson, D. M.: Comparison of pulmonary hyaline membrances in vagotomized rabbits with those in newborn infants. Pediatrics. 7:611-615 (May) 1951.
4. Miller, H. C. & Jennison, M. H.: Study of pulmonary hyaline like material in 4117 consecutive births. Pediatrics. 5:7-20 (Jan.) 1950.
5. Miller, H. C. & Hamilton, T. R.: The pathogenesis of the "Vernix membrance". Relation to aspiration pneumonia in stillborn and newborn infants. Pediatrics. 3:735-748 (June) 1949.
6. Report of Fifth M. & R. Pediatric Research Conference. Pulmonary hyaline membranes. M. & R. laboratories, Columbus, Ohio, 1953.
7. Smith, C. A.: The valley of the shadow of birth. AMA Amer. J. Dis. Child. 82:171-201 (Aug.) 1951.
8. Potter, Edith L. & Loosi, C. G.: Prenatal development of the human lung. AMA Amer. J. Dis. Child. 82:226-228 (Aug.) 1951.
9. Farber, S. & Sweet, L. K.: Amniotic sac contents in lungs of infants. AMA Amer. J .Dis. Child. 42:1372-1383 (Dec.) 1931.
10. Ravenel, S. F.: New technique of humidification in pediatrics. J. AMA 151:707-711 (Feb. 28) 1953.

PHOENIX Clinical CLUB

The Case History in this discussion is selected from the Case Records of the Massachusetts General Hospital, and reprinted from the New England Journal of Medicine. The discussant under Differential Diagnosis is a member of the staff of the Massachusetts General Hospital. The other discussants are members of the Phoenix Clinical Club.

MASSACHUSETTS GENERAL HOSPITAL

PRESENTATION OF CASE

A forty-eight-year-old man was admitted to the hospital in coma.

Eight days prior to entry, the patient had an episode of nausea and vomiting. The next day he complained of occipital headache and pain in the posterior neck muscles; from time to time he pounded his forehead and complained of some headache there. Four days before entry he had some difficulty in walking, and his legs gave way on one occasion; there was no persistence of this complaint, and no striking weakness or dragging either leg was noted. Two days before admission he complained of difficulty with his vision while looking at television. During the week before entry he continued to have nausea and vomiting, and occipital and frontal headache. His legs gave way again the night before entry, but he managed to get to bed without assistance and later that evening he made a few irrational, incoherent statements. Four hours before entry, his wife awoke to find him unresponsive and breathing stertorously.

Nine months before admission he came home from work with the story of having "blacked out" but there was no further information about this episode. The blood pressure at that time was 175 systolic. The next day nausea, vomiting, and some weakness of the legs developed. After ten days he returned to work asymptomatic except for some buzzing in the ears. Six months prior to entry he became extremely irritable and often sat around apathetically not taking as much interest in current events as he had in the past. All these symptoms subsided within a month, he returned to normal, and there was no change until the present illness. His wife, however, believed that whereas he had often been difficult to get along with in the past, in the five months prior to admission he had had a definite personality change, becoming more tractable. He had had no con-

vulsions, ataxia or slurred speech. There had been no weight loss, chronic fatigue, cough bloody stools, abdominal discomfort or urinary difficulties.

Two years prior to entry the patient passed an insurance medical examination. There was no other past history of note.

Physical examination revealed an extremely cyanotic, deeply comatose man, with labored respirations and an obstructed airway. Because respirations had almost ceased at the time of admission an emergency tracheotomy was performed, with almost immediate restoration of normal breathing and disappearance of the cyanosis. He remained comatose but occasionally moved his arms and legs spontaneously; on several occasions nonpersisting alternating flexion-extension movements of the right leg were noted. The only response to external stimuli was withdrawal of the limbs to pinpricks. His eyes were in the mid-line, with no movement from side to side when his head was turned; the right pupil measured 4 mm., and the left pupil 3.5 mm., but both reacted promptly to light. Good visualization of the fundi could not be obtained initially, but eight hours later the right optic disk was thought to be elevated, with a hemorrhage, and some blurring of the left disk was noted. Corneal reflexes were absent bilaterally. There was questionable right facial weakness on supraorbital compression. The neck was not stiff. The extremities fell limply to the bed when picked up, and no extensor rigidity was noted on turning the neck. The deep tendon reflexes were all hyperactive 3 plus, with bilateral extensor plantar responses and bilateral ankle clonus. The palate was pulled over to the right. The lungs were clear. The heart rhythm was regular. There was a systolic murmur heard all over the precordium, but best along the left sternal border. There was a hard nonpulsatile mass, 6 by 6 cm., palpable deep in the right upper quadrant.

The temperature was 102°F., the pulse 94, and the respirations 10. The blood pressure was 160 systolic, 80 diastolic.

Lumbar puncture showed an intial spinal-fluid pressure equivalent to 540 mm. of water, wthi deep-yellow fluid. The supernatant fluid showed deep xanthochromia and gave a 2 plus Pandy reaction. The spinal fluid contained 210 crenated red blood cells, 4 neutrophils and 10 lymphocytes per cubic millimeter. Examination of the blood showed a hemoglobin of 15.5 gm., and a white-cell count of 31,700, with 89 per cent neutrophils. The urine gave a 3 plus reaction for albumin and a green reaction for sugar; the sediment contained 2 to 3 red cells and 2 to 4 white cells per high-power field.

A few hours after admission the blood pressure was 210 systolic, 110 diastolic, and it persisted at this range until three hours before death. The temperature remained in the vicinity of 100°F., the deep tendon reflexes gradually disappeared, vital signs became poor and the patient died 18 hours after admission.

DR. PHILIP E. RICE

Our case today had evidence of a progressively increasing intracranial disorder of eight days duration, beginning with nausea and vomiting, followed by occipital headache and later with some motor difficulty and disturbance of vision and finally entering the hospital in deep coma. He had had a short spell nine months previously, having blacked out followed by nausea, vomiting and leg weakness which passin a few days. However he continued to note buzzing the ears. Six months before present illness there had been irritability and apathy lasting less than a month, followed by a possible personality change. Physical examination confirmed the presence of a serious intracranial process as demonstrated by coma, spontaneous arm and leg movements, no response to external stimuli except withdrawal of limbs, elevation of right optic disc with hemorrhage, blurring of left disc and slight inequality of pupils, which, however, reacted to light. Corneal reflexes were absent and there was questionable right facial weakness. There was no stiff neck and paralysis was flaccid rather than spastic. All tendon reflexes were hyperactive and there was bilateral Babinski and ankle clonus.

Up to this point we can assume that there was a cerebral process, possibly a slow hemorrhage into a pre-existing lesion, of a gradually progressive nature over eight days. Because of the small amount of blood in the spinal fluid, the slow progression and lack of stiff neck, I feel that this was intracerebral rather than subarachnoid. The past history makes us suspect that there was a nearly silent pre-existing lesion of some kind in the brain.

Then we reach the finding of a hard non-pulsatile mass 6 x 6 cm felt deep in the right upper quadrant. Such a mass could arise from the kidney, adrenal, gall bladder or liver. The absence of history of pain or digestive disorders seems to make the gall bladder and liver less liable to be the sites of origin. Also we have no basis to suspect a tumor arising from either the medulla or cortex of the adrenal. Likewise a kidney tumor having connection with the renal pelvis seems unlikely with only 2 to 3 red cells in the urine. This right upper quadrant tumor reached considerable size without causing symptoms, hence I suspect that it lay outside the various organs of this area. The exception would be the liver which especially in the left lobe, may contain large asymptomatic tumors.

In trying to connect the cerebral lesion to the tumor in question, it would seem that a metastasis would probably have to be secondary to a lung metastasis. We have no chest X-ray to prove or disprove this. So a right upper abdominal malignancy (such as hypernephroma, hepatoma, or melanoma) with metastasis is a likely possibility.

However we cannot be sure this was not an inflammatory process. The temperature readings recorded were 100° to 102°, the white count was 31,700 with 89% neutrophils. This may have indicated a terminal pneumonia. If the original process was infective it must have been of a subacute or chronic type as the past history revealed no chills, fever or other evidence of infection. We are given no history to suspect tuberculosis, but this does not rule it out and the same applies to the mycotic infections. Amebiasis is usually but not always preceded by a bout of dysentery but it cannot be eliminated from consideration.

From here on we must start guessing — which is a bad practice — hence I will give as the two possible diagnoses in this case:

1. Tumor of right upper quadrant such as hypernephroma, melanoma or hepatoma, with cerebral and other metastasis and a terminal pneumonia.

2. Liver abscess, possible amebic, with cerebral metastatic process.

DIFFERENTIAL DIAGNOSIS

DR. W. H. TIMBERLAKE: The nine-month course of this patient's illness was characterized by the episodic appearance of symptoms and their subsidence. This is not the usual course of a brain tumor but rather of vascular disease. In the last attack, beginning eight days before entry, there was nausea, vomiting, frontal and occipital headache, and neck pain. These symptoms are unusual in thrombosis or embolism except occasionally when the arteries of the brain stem are affected. However, they are a common constellation of symptoms when there is bleeding. Presumably, the headache is partially due to disruption of the vessel wall and adjacent meninges. When the headache is well localized, it may be a reliable indication of the side on which the lesion lies. Increased intracranial pressure may also be a factor in causing headache as well as the nausea and vomiting. The neck pain seems to be due to breakdown products of the blood irritating the cervical nerve roots as they pass through the subarachnoid space. This irritation, like that of meningitis, results in stiffness of the neck. The stiff neck may not be detectable for the first day or two, and it may, as in this case, be masked by coma. In the case under discussion the lumbar puncture confirmed the diagnosis of bleeding into the subarachnoid space. The initial pressure of the spinal fluid was increased, there were 210 red cells, and the fluid was deep-yellow color although there was only a 2 plus Pandy-that is, the color was not due to increased protein. Crenation of red cells may occur rapidly, and the yellow color of the supernatant fluid is a more reliable way to tell that this was not just a bloody tap.

In the absence of trauma, subarachnoid bleeding may occur in several conditions. When an intracerebral hemorrhage ruptures into a ventricle the blood follows the course of the cerebrospinal-fluid circulation out through the apertures of the fourth ventricle into the subarachnoid space. Usually, such patients have arteriosclerosis and a diastolic blood pressure over 100. They quickly become comatose and remain comatose until their death a few days later. Such was not the course in this case.

Infrequently, tumors of the brain bleed into the subarachnoid space. Angiomas may bleed repeatedly over a long period, and angiomas tend to cause epileptic convulsions. In the absence of these two items in the history, the diagnosis is only a guess until confirmed by x-ray demonstration of calcification in the typical pattern, or arteriography. Gliomas and

metastatic tumors have caused fatal subarachnoid hemorrhage in only 5 cases each, as confirmed by post-mortem examination here, in the past twenty-five years. I have no reason to suspect either, from the course of the neurologic symptoms. However, the mass felt in the right upper quadrant, together with the red cells in the urine, made me wonder about a renal-cell carcinoma, a tumor that may metastasize to the brain and may cause subarachnoid hemorrhage. The patient was too ill for x-ray studies, and there is unsufficient evidence to establish this diagnosis.

Infected emboli in patients with subacute bacterial endocarditis may cause mycotic aneurysms, which rupture into the subarachnoid space. The history and findings give no basis for that diagnosis, nor for two other exceedingly rare causes of fatal subarachnoid hemorrhage-thrombosis of dural venous sinuses and hemophilia.

I now come to the common cause of subarachnoid hemorrhage-rupture of a congenital aneurysm. (Arteriosclerotic and syphilitic aneurysms almost never rupture.) Congenital aneurysms are probably due to a developmental defect of the muscle layer in the crotch of an arterial bifurcation. The weak area gradually bulges until the thinned wall gives way. Rarely do these aneurysms cause symptoms by direct pressure. They may cause symptoms by bursting at any age. In this hospital the age when rupture first occurred ranged from four to seventy-nine years, with a maximum number in the fifth decade, the age of this patient. The first rupture occurred at rest or during light activity in half the cases.

These aneurysms are usually located in a distal angle of the circle of Willis or at the main bifurcation of the middle cerebral artery. Almost half the aneurysms are located where the internal carotid joins the circle so rupture it likely to implicate the adjacent third nerve. Thus the common finding of ptosis, weakness of extraocular muscles supplied by the third nerve and a dilated pupil on the side of the aneurysm is not surprising. The transient blurring of vision of this patient two days before entry was not well enough described to be identified as diplopia, and in view of its late appearance and the absence of ptosis I think this symptom is more likely to have been related to the developing papilledema. Other aneurysms are difficult to localize.

The infrequent aneurysms of the basilar artery or its branches sometimes rupture into the adjacent basal cisterns of the subarachnoid space, and no focal symptoms result until clotting closes this path and later bleeding disrupts cerebral substances, or clotting in the aneurysm thromboses the vessel with infarction. Intracerebral rupture is seen even with aneurysms of the basilar artery terminally but is most likely to occur with the aneurysms that lie in the cerebral fissures, aneurysms of the middle cerebral and of the anterior-cerebral, anterior-communicating artery bifurcations. Either of these may rupture into the frontal lobe and one can only infrequently distinguish them, as for instance when the middle cerebral aneurysms ruptures into the parietal lobe. In the present case there may be another localizing hint.

I think the "black out" that the patient had nine months before entry represented the first leakage of the aneurysm. The nausea and vomiting the next day are common symptoms. One can only speculate that he probably had the usual initial severe headache. The weakness of the legs then, and again the last attack, may indicate that I am dealing with an aneurysm of the anterior cerebral artery. The leg area of the precentral cortex is supplied by the anterior cerebral arteries. Aneurysms of the anterior cerebral arteries are not infrequently associated with an anomaly of the circle of Willis in which one anterior cerebral artery is a tiny vessel from the carotid to the anterior communicating artery, and the distal portions of both anterior cerebral arteries in effect arise from a common trunk, with the aneurysm in the crotch between them so that it might disturb bloodflow bilaterally.

The personality change six months before entry suggests disturbance in frontal-lobe function and may have represented the first intracerebral bleeding. The "irrational, incoherent statements" made the night before entry apparently were not aphasic in character and may only have been the result of the rising intracranial pressure that finally led to coma. The right facial weakness is an indication that rupture was into the left frontal lobe. Though both arms and legs moved, there appears to have been some simple repetitive activity of the right leg, again suggesting irritation on the left. The bilateral flaccidity with increased

deep reflexes should mean disturbance in the posterior part of both frontal lobes, and so there was probably some extension of the intracerebral blood into the right frontal lobe.

The absent corneal reflexes and eye movements probably reflect the depth of coma and are not localizing.

On entry the patient had an obstructed airway, which was promptly relieved by tracheotomy. Although the vocal cords are not described I suspect this man had bilateral abductor paralysis of the vocal cords due to secondary hemorrhage of the brain stem. The asymmetry of the palate suggests that the hemorrhage was primarily on the left.

Other congenital anomalies were found in 7 of the 68 cases examined post mortem here; 2 of these included polycystic kidneys. The mass in the right upper quadrant may have been a polycystic kidney.

A temperature of 101 to 102°F. and mild leukocytosis commonly accompany subarachnoid hemorrhage. About 1 patient in 20 has transient albuminuria or glycosuria. Despite the fact that this patient passed an insurance examination two years prior to admission I think the elevated blood-pressure readings were probably the more representative ones and an elevated blood pressure makes for a poorer prognosis in these patients.

My first choice of diagnoses is intracranial aneurysm of an anterior-cerebral, anterior-communicating artery bifurcation, with rupture into the left frontal lobe, with some extension into the right and with secondary medullary hemorrhage, and polycystic kidneys; my second is ruptured aneurysm of the basilar artery; and my third is renal-cell carcinoma with intracerebral metastases.

DR. CHARLES S. KUBIK: There was only a small number of red cells in the spinal fluid; what do you think of that?

DR. TIMBERLAKE: I think the terminal bleeding was mainly into the cerebral hemisphere and that little of it went into the subarachnoid space. These red cells were probably residual from the event a few days before.

DR. WILLIAM H. SWEET: There was not time to do the test on this patient I am going to suggest. When the yellow color of the spinal fluid test on the spinal fluid may aid one in solving the problem. A positive test for bilirubin would suggest that the color was indeed due to hemorrhage, as Dr. Timberlake has assumed.

DR. BENJAMIN CASTLEMAN: But if there were a tumor that was necrotic and bled, one would get the same result.

DR. SWEET: Yes; that is not quite as likely as a tumor that leaks protein into spinal fluid and gives a yellow color without bleeding.

DR. KUBIK: In those cases one would expect to find a high protein. This was not high.

CLINICAL DIAGNOSIS

Congenital aneurysm of anterior cerebral artery.

DR. TIMBERLAKE'S DIAGNOSIS

Ruptured aneurysm of anterior cerebral or basilar artery and polycystic kidneys.

Renal-cell carcinoma, with intracerebral metastases.

ANATOMICAL DIAGNOSIS

Renal-cell carcinoma, with multiple hemorrhagic metastases to brain.

PATHOLOGICAL DISCUSSION

DR. EDWARD P. RICHARDSON, Jr.: There were many scattered hemorrhagic lesions in both cerebral hemispheres and cerebellum, with one in the medulla. From one of these lesions bleed entered the left lateral ventricle. Each one of these lesions consisted of a nodule of tumor tissue completely infiltrated and surrounded by hemorrhage.

DR. CASTLEMAN: The source of the tumor was in the lower pole of the kidney, and microscopically the tumor was a classic renal-cell carcinoma with the clear cells throughout. We found no evidence of tumor anywhere else at the autopsy. There was no tumor in the renal vein and no tumor in the lungs so that the tumor must have reached the brain via the vertebral veins as has been so beautifully demonstrated by Batson. At the recent meeting of the American Association of Pathologists in April an interesting paper was read in which the authors suggested another way that a tumor may metastasize to the brain. Zeidman and Buss introduced a suspension of tumor cells—one of the common experimental tumors—into the venous circulation of rabbits and at the same time withdrew arterial blood from the abdominal aorta. This arterial blood was then injected intravenously into another aeries of animals, in 50 per cent of which tumor nodules appeared. These experiments suggest that the tumor cells would have to go through the

capillaries of the lungs immediately to get into the abdominal aorta.

DR. KUBIK: The theory that the tumor cells pass through the lungs seems more likely than that cells would travel against the currents of the blood in the vertebral veins.

BASIC *Science* SEMINAR

THEORIES OF NARCOSIS

By Roger Seyferth, M.D.

THE term narcosis is of Greek derivation indicating a state of profound unconsciousness. Basal narcosis refers to a situation involving not only deep sleep or stupor but also analgesia. In the final analysis, probably there is no sharp division between the two except for the level of stupor. The deeper the stupor, the greater the extent of analgesia. Of course, it is possible to produce profound analgesia of various parts of the body without unconsciousness.

The study of narcosis necessarily involves the study of physiology and pharmacology. The clinical application of these studies has resulted in the art and science of anesthesia. Thus, a short consideration of the history of anesthesia is not amiss.

It is known that the Egyptians practiced surgery and they probably made use of various narcotics. Hashish was employed by the Chinese for analgesia and Pliny, Dioscorides and Apulius recommended Mandragora (belladonna alkaloids) for premedication before surgical procedures. Various methods in addition to drugs were devised to render patients unconscious prior to surgery, such as the Assyrian policy of asphyxiating children before circumcision, and the production of cerebral concussion by striking a wooden bowl placed on the head. For years morphia, hyoscine and alcohol were the main drugs used.

In 1807 Baron Larry performed painless amputations, using ice, on the battlefield. Of course, everybody is familiar with the achievements of Long, Wells, and Morton during the epoch making years of 1842-46 during which time the virtues of ether and nitrous oxide were presented to the world. It is interesting to note that a period of 302 years had elapsed since the discovery of sweet vitriol (ether) by Valerius Cordus in 1540.

In consideration of the various theories of narcosis, the phenomenon of sleep is a logical starting point. The state of more or less complete unconsciousness which is designated as sleep forms a part of the physiology of the brain which naturally has attracted much attention. In all living things there occur periods of rest alternating with periods of activity. Whether these periods of rest are essentially similar to sleep in man is a question of speculative probability. Sleep from this standpoint is a period of comparative inactivity, during which the constructive or anabolic processes are in excess of the disassimilatory changes of catabolism. Sleep in the brain tissues probably applies to similar phenomenon in other tissues such as glands.

The physiological relations of the body during sleep have been well studied and it is noted that the body processes go on much as in the waking state. Those changes that do occur are mostly an indirect result of the partial or complete cessation of activity in the cerebrum. A fact of interest is that the entire cortex does not fall asleep at the same instant nor always to the same extent. As sleep sets in, the power to make conscious movements is lost first and auditory sensibility last. On awakening, the reverse holds true. The person may be conscious of sound before he is sufficiently awake to voluntary movements.

The intensity of sleep (depth of unconsciousness) has been fairly well worked out to show that the greatest intensity is reached about an hour after the beginning, and from the third hour onward the depth of sleep is very light. The activities of the brain lie just below the threshold of consciousness. It is also a matter of common knowledge that the recuperative effect of sleep is not directly proportional to its intensity.

A brief statement as to some of the theories

of sleep follows:

1. Accumulation of acid waste products. This accumulation in the blood brings on a gradually increasing loss of irritability or fatigue in the brain cells which results in a depression of their activity, causing a loss of consciousness.

2. Consumption of intramolecular oxygen. The brain cells during the waking hours use up their store of oxygen more rapidly than it can be replaced by absorption of oxygen from the blood.

3. Toxin theories. Some special toxin or hormone is formed during the waking hours which finally accumulates in sufficient quantity to inhibit the activity of the cortical cells.

4. Neuron theory. The connection betweeen cells in the cortex and incoming impulses along afferant paths is interrupted mechanically by contraction of the dendrites and thus isolating the cortical cells from all possibility of external stimulation.

5. Inhibitory theory. Sleep is simply a spreading of the process of internal inhibition to the entire cortex.

6. Anemia theory. That sleep is produced because of a physiologic reduction of blood supply to the brain; based upon a loss of vasomotor tone.

7. Fatigue of neuromuscular mechanisms. Muscle fatigue, incurred during the day by constant activity, causes a decrease in the flow of proprioceptive impulses from the muscles, causing a functional break between the cerebral cortex and the lower portions of the central nervous system.

8. Sleep centers. The assumption of a sleep center, possibly in the thalamus, which produces sleep either by excessive activity or inhibited activity. It is of interest to note that in specific diseases characterized by lethargy or sleep such as the various encephalitides, there are detectable pathological changes in the thalamus and basal ganglia of the brain.

Progressing now to the chemical basis of proposed mechanisms of narcosis as produced by drugs, it is to be seen that most of these theories are based upon chemical, physical, or physical-chemical phenomenon illustrated by experiments upon actual living cells, or in vitro systems constructed to simulate cells. They may all be grouped under the following classification as described by the Adriani—

1. Those which postulate the effects of the drug are due to a specific solubility in certain cellular constituents, e.g., a high lipoid solubility.

2. Those which postulate changes in cell metabolism which result from physio-chemical phenomenon induced by the drug, e.g., cell colloidal changes, or change in surface tension.

3. Those which propose alteration of oxidative processes by either depriving the cell of oxygen or modifying the cells power to use oxygen.

4. Those based upon changes in physical phenomenon such as reversal of electrical polarity of cerebral cells from the observed normal.

A brief statement describing some of these theories follows:

1. The simple and early belief that narcosis is caused merely by asphyxia.

2. Claude Bernard's theory that narcosis is due to a reversible coagulation of the constituents of the nerve cells.

3. The Meyer-Overton theory which assumes that the action of anesthetics is due to the fact they are soluble in and are taken up by the liquids of nerve tissue.

4. Lillie's theory that narcotics produce their effects by modifying cellular membranes, making them more resistant to changes of permeability. Since variations of permeability are essential to stimulation, the irritable tissue is thus rendered temporarily insensitive.

5. Verworn's theory that the depression of the neuron is due to suppression of the power of the cell to use oxygen inasmuch as narcosis is accompanied by diminished oxygen utilization.

6. Burges' electrical theory of narcosis which claims that narcotics cause a decrease in the electronegativity of the brain cortex so that the brain cortex is electropositive. The loss of negative potential is due to the blocking of of the passage of negative charges into the cortex through sensory fibers while motor fibers are left free to conduct the negative charges away, thereby rendering the cortex electropositive.

A practical classification of the action of narcotics on the body may be described as—

I. Uptake; II. Fixation; III. Biological response.

The physical phenomenon known as absorption and water solubility are accepted by most authorities as adequately explaining the body's uptake of a narcotic agent whether gaseous or liquid.

In explaining fixation, opinions differ widely and are extremely varied. One of the more recent theories is that of Wheatly and Quastel the chief exponent of which is T.A.B. Harris in Britain. The theory is briefly described as follows:

A. The cell membrane is a true entity.

B. Narcotic drugs exert their pharmacologic action on the cell membrane and not in the interior of the cell.

C. In the cell membrane are "active patches" or specific receptors which combine with the narcotic mass.

D. There is an uptake of the narcotic mass by certain enzymes within the cell; narcotics inhibit the action of this enzyme but in a reversible manner.

E. Narcotics do not interfere with the access of oxygen to living cells or with the uptake of oxygen by cells.

F. This selective inhibition of a particular form of metabolic activity applies to both aerobic and anaerobic forms of life.

G. Carbohydrate is used exclusively by the brain as a source of energy.

H. Thus there is an inhibition of the oxidation of glucose and pyruvic and lactic acids which diminishes the energy available for the cell to accomplish its normal functional activity and so produces a state of narcosis.

Clinically the biological response of the body to narcotics is uniform and authorities are in more or less agreement. Hughlings Jackson summed up the matter of susceptibility to narcotices in the following generalization. "The last (cells) to come (in the order of evolutionary development), the first to go." Thus the following sequence is demonstrable—memory loss; cooperative stupor; non-cooperative stupor; loss of consciousness; loss of reflex activity to external stimuli; loss of muscle tone in striated muscle (except diaphragm); failure of respiratory center; failure of vasomotor center; failure of cardiac center. Recovery from narcotic administration occurs in reverse order.

It will be seen from reviewing the extensive literature concerning the effects of narcotics drugs upon the body, that many changes from the normal occur, such as those on blood pressure, heart rate, respiration, kidney infection, gastro-intestinal function and liver function. A few of the theories of narcosis are similar to some of the theories of sleep but in the main, the chief difference implied lies in the suggestion that in sleep the cortical cells are by some functional mechanism disassociated from the remainder of the central nervous system while in narcoses, the cells are depressed in function. It is an undeniable fact that the patient does not awaken from a state of narcosis feeling refreshed and rested as he would from normal sleep. We can probably assume that in a state of narcosis, the anabolic activities of the body are in no way comparable to their activity during normal sleep. The one fact to be ever always remembered is that all truly narcotics agents are central nervous system depressants. This includes the list of drugs from ether to morphine. The clinical deduction obtained from this basic physiological and pharmacological concept of narcosis and sleep is that it is far better to attempt to cure insomnia not by the simple and widespread method of prescribing sleep-inducing potions but rather by intrigue and suggestion such as a warm bath, a night cap or hot toddy, or a brisk bit of evening exercise.

Not too many years ago it was well proven that man possessed five senses: tactile-pain, taste, hearing, sight, and smell. It is known now that afferent impulses passing through posterior root fibers consist of pain, tactile, thermal sensation, deep or muscle sensation from bones, joints, tendons etc., and afferents from the viscera. The pathways carrying these sensations in the central nervous system have been well described and use of this knowledge made in everyday spinal analgesia for both medical and surgical purposes. It is commonly observed that if an administered spinal anesthetic extends to the upper thoracic region, the patient tends to become drowsy. In addition, if a general anesthetic is now given only a very small amount is necessary to produce unconsciousness and respiratory arrest is apt to follow with doses which would not have this effect if the patient were not under a spinal anesthetic.

Purdon Martin has pointed out that consciousness is maintained by "an awareness of the body" and of environment. Consciousness lapses in the absence of sensory impulses to the cortex. It is obvious that the higher a spinal anesthetic spreads, the more the awareness of the body is diminished. The area from which

Amebiasis[1] a "Poorly Reported" Disease

Until serious complications arise, amebiasis may pass unrecognized and patients receive only symptomatic treatment.

Although amebiasis is a disease with serious morbidity and mortality, statistics on its incidence[1] are incomplete because its manifestations are not commonly recognized and consequently not reported.

"*Vague symptoms[2] referable to the gastrointestinal tract, such as indigestion or indefinite abdominal pains, with or without abnormally formed stools, may result from intestinal amebiasis. Not infrequently in cases in which such symptoms are ascribed to psychoneurosis after extensive x-ray studies have been carried out, complete relief is obtained with antiamebic therapy.*"

To prevent possible development of an incapacitating or even fatal illness and to eliminate a reservoir of infection in the community, diagnosing and treating[3] even seemingly healthy "carriers" and those having mild symptoms of amebiasis is advised.

Early diagnosis[1] is important because infection can be rapidly and completely cleared, with the proper choice of drugs and due consideration for the principles of therapy. For treatment of the bowel phase these authors find Diodoquin "most satisfactory."

For chronic amebic infections, Goodwin[4] finds Diodoquin to be one of the best drugs at present available.

Diodoquin, which does not inconvenience the patient or interfere with his normal activities, may be used in the treatment of acute or latent forms of amebiasis. If extraintestinal lesions require the use of emetine, Diodoquin may be administered concurrently. It is a well tolerated and relatively nontoxic orally administered amebacide, containing 63.9 per cent of iodine.

Diodoquin (diiodohydroxyquinoline), available in 10-grain (650 mg.) tablets, reduces the course of treatment to twenty days (three tablets daily). Treatment may be repeated or prolonged without serious toxic effect. It is accepted by the Council on Pharmacy and Chemistry of the American Medical Association. G. D. Searle & Co., Research in the Service of Medicine.



Endamoeba histolytica (trophozoite).

1. Hamilton, H. E., and Zavala, D. C.: Amebiasis in Iowa: Diagnosis and Treatment, J. Iowa M. Soc. *42*:1 (Jan.) 1952.

2. Goldman, M. J.: Less Commonly Recognized Clinical Features of Amebiasis, California Med. *76*:266 (April) 1952.

3. Weingarten, M., and Herzig, W. F.: The Clinical Manifestations of Chronic Amebiasis, Rev. Gastroenterol. *20*:667 (Sept.) 1953.

4. Goodwin, L. G.: Review Article: The Chemotherapy of Tropical Disease: Part I. Protozoal Infections, J. Pharm. & Pharmacol. *4*:153 (March) 1952.

the cortex received stimuli is lessened. If the solution spreads to the foramen magnum, sensory stimuli from the body are eliminated and the patient remains awake by virtue of stimuli reaching the cortex from the cranial sensory nerves.

When a person attempts sleep, he does what he can to eliminate outside stimuli. The room is dark, noises absent, supine position to decrease proprioceptive impulses, etc. A conscious person certainly is in possession of some of his senses. The moot question remains—if a person is deprived of his senses, can he remain conscious. All available evidence would seem to indicate that a state of narcosis most likely will result if all sensory impulses are interrupted to the cortex. Other questions naturally follows. How deep a stupor will result? Would the various vital centers in the brain stem continue to function? This line of logic would lead one to suspect that perhaps Lillie's theory of narcosis (rendering the irritable tissue of the cortex temporarily insensitive) might have more than a little merit.

It is of interest to note that within the past two decades in anesthesia, the pendulum has swung more and more away from the old gas general anesthetic agents to newer and better general and local anesthetic drugs with other means of enabling surgeons to obtain excellent muscular relaxation and still keep the patient in a very light plane of anethesia. By this I am referring to Curare and Curare—like drugs such as Anectine. Most anesthetists dislike the thought of having to maintain patients in a deep anesthetic plane for long periods of time. Indeed, the good anesthetist will make the surgeon hard pressed to finish suturing the skin before the patient wakes up. The point is, in a deep plane of surgical anesthesia, the border between here and the hereafter is not always too well demarcated. Furthermore, with light anesthesia the incidence of post-operative anesthetic complications will be decreased.

Thus, the anesthetic of the future would ideally accomplish the following:

1. Do away with cortical cell depression and instead selectively interrupt only the required sensory impulses from reaching the cortex.

2. Not affect motor fibers at the level of the central nervous system but only at the operative site.

3. Promote the processes of anabolism as in sleep.

SUMMARY

1. Definition of narcosis.
2. Brief insight into the history of anesthesia.
3. The phenomenon and theories of sleep.
4. Mechanisms and theories of narcosis.
5. Comparison of sleep and narcosis.
6. Thoughts as to the maintenance of consciousness.

REFERENCES

Goodman, L., and Gilman, A., The Pharmacological Basis of Therapeutics.

Howell, W. H., A Textbook of Physiology, 14th edition.

Best, C. H., and Taylor, N. B., The Physiological Basis of Medical Practice, 5th edition.

Adriani, J., The Chemistry of Anesthesia.

Oldham, F. K., and Kelsey, F. E., and Gieling, E. M. K., Essentials of Pharmacology.

Lee, J. A., A Synopsis of Anesthesia, 2nd edition.

MacIntosh, R. R., Lumbar Puncture and Spinal Analgesia.

Harris, T. A. B., The Mode of Action of Anesthetics.

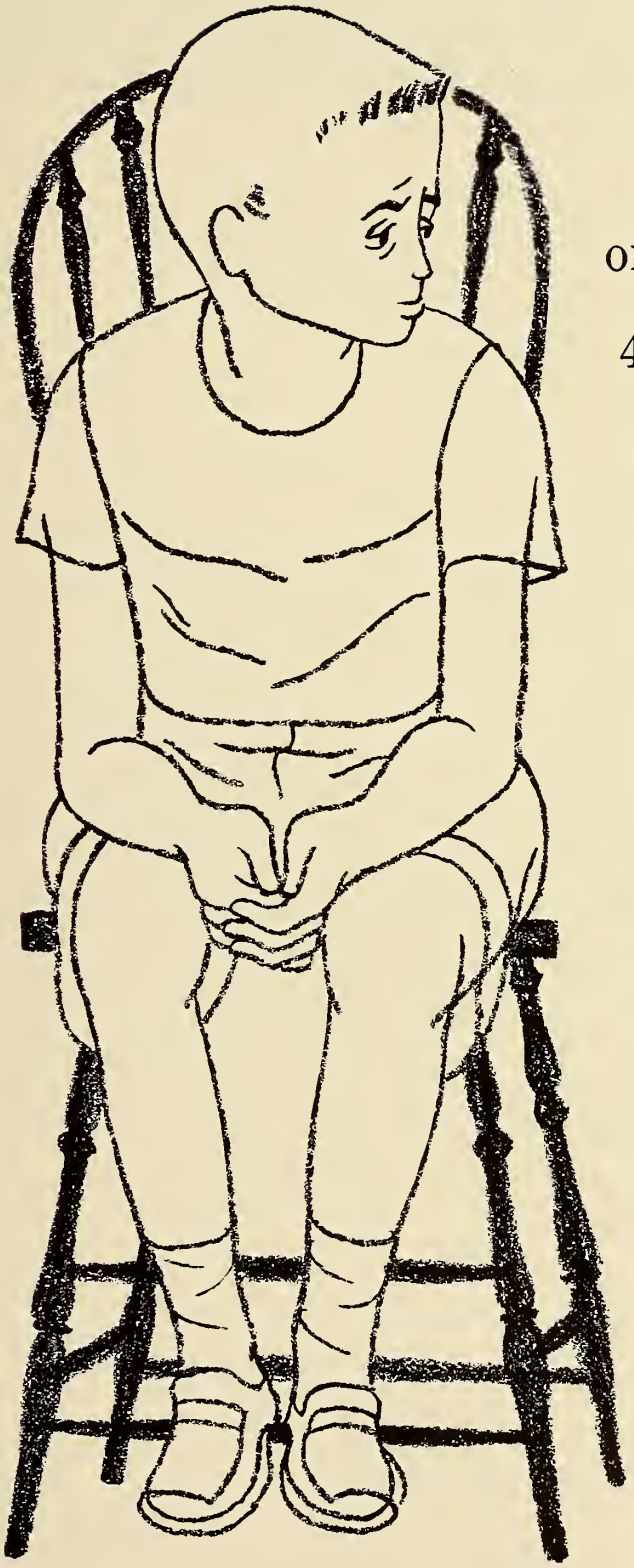
NEWS ITEM

MEDICAL SECRETARIAL SERVICE. Mrs. Zelma O. Simson and Mrs. Patte Joy, both trained medical secretaries, announce the establishment of Patte-Zoe's Medical Secretarial Service, with office at 1925 W. Holly. They offer some services which they claim to be unique, including direct dictation over telephone to the dictating machine at the office of this Service – day or night, 9 a.m. to 9 p.m. They hope to expand this to a twenty-four hour service. Or the doctor may use his own dictating machine, have the discs or records picked up, transcribed and the transcriptions accurately made and delivered back to him promptly. Mrs. Simson will be remembered by many doctors in the community for her long service in the record room and x-ray department at Good Samaritan Hospital.

They offer research work for doctors desiring to prepare papers, and notary service at the doctor's office, when desired.



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Schaerrer, W. C., J. Missouri M. A., 37:287.

408152A

THE *President's* PAGE

THE SCIENTIFIC ASSEMBLY COMMITTEE

THE SCIENTIFIC ASSEMBLY COMMITTEE OF THE ARIZONA STATE MEDICAL ASSOCIATION HAS HAD ITS FIRST FORMAL MEETING AND THE CHAIRMAN OF THIS COMMITTEE, YOUR PRESIDENT-ELECT, DR. HARRY E. THOMPSON, HAS ALREADY ACCOMPLISHED A GREAT DEAL. THE PREPARATIONS FOR THE SCIENTIFIC PORTION OF THE MEETING HAVE BEEN RAPIDLY ADVANCING AND IT APPEARS THAT THE MEETING WILL HAVE A WIDE APPEAL TO THE MEMBERS OF THIS ASSOCIATION. A PARTICULARLY ACTIVE GROUP WILL BE THE AMERICAN ACADEMY OF GENERAL PRACTICE WHO WILL HAVE SOME VERY WORTH WHILE SEMINARS. EVERY EFFORT WILL BE MADE TO HAVE THE ENTIRE PROGRAM COMPLETED BEFORE THE END OF THIS YEAR AND IT IS IMPERATIVE THAT THE CHAIRMAN OF THE SPECIAL SOCIETIES WITHIN THE ASSOCIATION CONTACT DR. THOMPSON PRIOR TO THE 1ST OF SEPTEMBER, THUS ASSURING THEIR SPEAKER OF A PLACE ON THE PROGRAM.

CORDIALLY YOURS,

OSCAR W. THOENY, M. D.
PRESIDENT

Editorial

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The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.
2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. (See MEDICAL WRITING by Morris Fishbein.)
3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.
4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.
5. Submit manuscript typewritten and double-spaced.
6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.

The Editor is always ready, willing, and happy to help in any way possible.

CORTISONE AND EMERGENCY SURGERY

CORTISONE is so effective in causing atrophy of the adrenals, that indications for surgical adrenalectomy are doubtful except in cases of severe malignant hypertension or in some cases of Cushing's syndrome. However, medical adrenalectomy is rarely desired, except in some instances of inoperable carcinoma of the prostate or breast. This loss to the endocrine system of the adrenal function is being seen with increasing frequency, particularly here in the Southwest with the many patients who have asthma, arthritis, or another of the collagen diseases. In many cases, the patient is maintained for long periods on Cortisone with no rest period nor intervening periods of ACTH stimulation. Post-mortem examination in this group shows an atrophy of the adrenals to 5% of their normal size, glands which are physiologically of less use than their minimal anatomical size.

Occasionally these patients are suddenly subjected to added stress, as an accident or emergency surgery, and they do not have the necessary reserve to meet the increased demand placed upon them. If adequate supplemental encrine therapy is not immediately administered they may go into irreversible shock, with prompt death, or death in 5 to 6 to 12 hours. When emergency surgery becomes necessary in a patient who has been on long term Cortisone therapy the products of adrenal secretion must be increased, not decreased; the fear of delayed wound healing is to be ignored. If 2 to 3 days of preparation is possible prior to surgery the problem is greatly minimized. The adrenals should be stimulated by ACTH injections. The patient should receive at least 25 mg. of Cortisone by mouth every 6 hours, additional Cortisone intramuscularly, 6 mg. of DOCA daily, and 10 mg. of DOCA in the AM prior to surgery. About one hour prior to surgery 50 cc. of the aqueous adrenal cortical extract should be started in 1000 cc. of 5% glucose in normal saline or, preferrably replace the aqueous extract with lipo adrenal extract. During the operation the supplemental therapy as lipo adrenal extract or aqueous cortical extract must be continued, using Levophed in the parenteral fluids and adequate blood replacement. If surgery must be performed immediately adrenal cortical extract becomes of utmost importance along with Levophed and blood. Simultaneously, give parenteral DOCA and Cortisone. When available the intervenous preparation of Compound F will prove extremely helpful.

This is not an uncommon problem in the Southwest. The medical man must allow periods of regeneration of the adrenals by intervening rest periods or periods of ACTH stimulation. The surgeon in turn must be cognizant of the danger of added stress to these patients on prolonged Cortisone therapy, who respond as patients with true Addisons disease.—D.W.N.

TOPICS OF *Current Medical* INTEREST

RX., DX., AND DRS.

By Guillermo Osler, M.D.

AN important attitude towards COCCIDIOIDOMYCOSIS has been described by Levan in 'California Medicine', and it should be of interest to Arizona . . . 'Cox', as it is called, may have an OCCUPATIONAL origin and may be of MEDICO-LEGAL importance. Levan is from Bakersfield, in the 'valley' or 'desert' area from which the disease got two of its other names . . . Some cases have been accepted as compensible by insurance carriers, the Industrial Accident Commission, and the courts . . . Factors which may determine compensibility are found in the following situations, 1. Laboratory infections; 2. Infection from contaminated articles, outside of an endemic area; 3. Infection of employees entering an endemic area in the course of their occupation; 4. Primary cutaneous inoculation; 5. Localization and/or aggravation of pre-existing 'cox' by occupational injury; 6. Infections in agricultural workers imported to endemic areas; 7. Infection of residents of endemic areas alleged to result from occupational exposure . . . The author describes cases in each group, and it makes serious reading. It often requires keen medical and legal detective work to find origins and proof . . . Ideally the criteria should include evidence that the person was free of disease before exposure (though this may be hard to get); there should be no chronologic discrepancies between exposure and onset; the working conditions should clearly include exposure; and exposure outside of employment should not exceed that of the occupation . . . The start of an action to establish a case as occupational is a function of the physician, it is said.

* * *

The HAZARD to a community, and to the reputation of a community, can clearly be noted in the preceding paragraph. It seems logical that EPIDEMIOLOGIC studies be stepped-up, that basic research be increased to find A VACCINE OR A THERAPY, and that physicians and the public be alerted to use INFECTIOUS DISEASE PRECAUTIONS in the care of open cases . . . Rosenthal of Chicago is one of the few researchers who believe that infection may result directly from a cavity case, and his infections were produced in animals. Nevertheless, organisms are developed in the soil and carried in the dust, and they can not get to the soil (or certain animal vectors) without contamination from human sources . . . It is just as logical to prevent expectoration, etc., by patients with the disease as it is for TB; perhaps more so because of the growth of the fungus in the soil . . . The attitude of physicians is too often to observe the lesion, and to let the patient freely roam, rather than to shut off the source by precautions, (or by resection).

* * *

THERAPY, for 'cox' is more active than it has ever been. Resection is used earlier rather than as a last resort for bleeding. It is also becoming known (Cotton, et. al.) that removal of a pulmonary focus practically excludes a pulmonary or general dissemination . . . Fairly good results have been claimed for thyl vanillate, though it is a most unpleasant stuff. The Merrell Co. says that their fencholate, MRD-112, is very effective against C. immitis in vitro, but they avoid claims and are watching its early use carefully.

* * *

PERNICIOUS ANEMIA first began to take a punch in the nose back in the 1920's, by Minot and Murphy of Boston . . . The most recent blow aimed at the disease has also literally been to the nose, by Monto and Rebuck of Detroit. They describe the inhalation of vitamin B-12 by a nasal spray, in an article in the 'Archives of Internal Medicine' . . . Their series is composed of 12 cases with relapse and 20 cases on maintenance therapy, with excellent results up to 18 months, and with no evidence of toxicity or sensitivity . . . They mention, of course, the cost, pain, inconvenience, or bad taste of liver derivatives used by other portals.

* * *

The use to which statistics are put depends on where you stand, or your metabolism, or some such modification . . . e.g., the significance of a decrease in ADMISSIONS TO TUBERCULOSIS SANATORIA in 1953. One can say that there was a drop from 1952, and decide TB is licked. Or, one could look at the figures, see that the change was from 109,925 in 1952, to 108,471 in 1953, and decide that the difference was not statistically significant. (The number went up from 107,181 in 1951, and it was simply said to be due to better use of more facilities) . . . We had better keep right on 'licking TB' for quite a while, and not neglect to use the sanatoria.

* * *

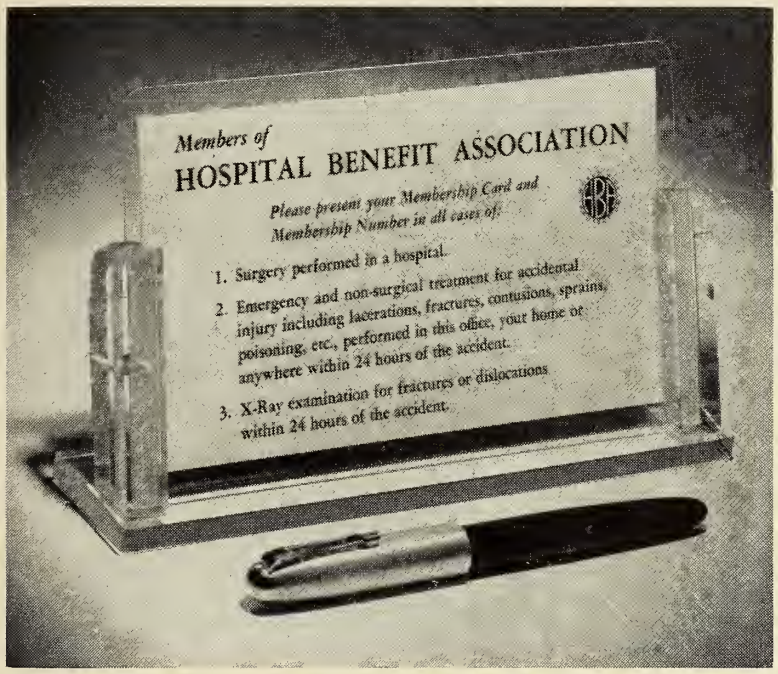
A Pfizer 'spectrum' article in the A.M.A. gives us biochemists and physiologists who have gotten a few years behind quite a jolt . . . As they say "Once Upon A Time the PLASMA PROTEINS consisted merely of albumin and globulin, and all they did was form a ratio, generally

HBA FOR SECURITY

THE HOSPITAL BENEFIT Bulletin

Special Published Bi-Monthly by the Hospital Benefit Association, First Street at Willetta, Phoenix August, 1954

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Getting back to the original subject, you may have one of these plastic-encased cards and easel stand for your office at no cost. It is attractive, neat and compact (compare with the size of the pen in photo), and you can get one by returning the coupon or phoning ALpine 8-4888 in Phoenix; 3-9421 in Tucson.

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You'd be surprised at the large number of members' files that nave been "pulled" and set aside waiting for surgeons to send their bills so that the cases can be closed. If you have any notices from HBA lying around your office, please get to them so we can get busy and send you any checks you may have coming to you.

too low" . . . They add that 35 fractions have now been identified, by dint of a forced research program during the war, but 10 per cent of the plasma protein is still not labelled . . . Here is a chance to be a hero, and all it requires is a few chemical, physical, electrical, and isotopic techniques.

* * *

It should be soothing to a person who hasn't WRITTEN A MEDICAL BOOK to know that vanity, money, and lack of objective have resulted in a very large number of unused volumes on library shelves (and in the author's cellars) . . . The Bulletin of the Los Angeles Medical Society further soothes those who are trying to write by stressing the old axiom "An author must write two million words out of his system before he will begin to write well". . . . If this is an invariable rule, you only have to wade through two more years of Guillermo Osler before the stuff begins to sparkle.

* * *

A boost for an Arizona snake-bite treatment also comes from Los Angeles. Dr. Gilbert, the County Health Officer, recommends the 'L-C' method described by Professor Herbert Stahnke of Arizona State . . . The L-C method means 'ligature and cryotherapy' (and 'cryotherapy' means 'cold'). The combination can eliminate the cut-and-suction procedure, and is valuable for many types of venomous bites and stings . . . If anyone recognizes part of the method you can be sure it appeared in ARIZONA MEDICINE first in the symposium on "Bites and Stings of Small Desert Animals". We quote the description of Dr. Gilbert, — "Assuming the bite is on the hand, foot or leg, a constricting band is placed a short distance above the puncture wound immediately after the bite occurs. Since the idea is to slow down the flow of venous blood back to the heart and yet permit the free circulation of arterial blood, it is important not to have the band too tight. .A piece of ice is then placed over the bite while a quantity of ice and water is obtained and put in a container large enough to permit immersion of the limb well beyond the ligature.

"After five minutes of immersion, the band may be removed. The limb must be kept in iced water for at least two hours. If the rattler happens to be large, or the victim a small child, this treatment may have to be kept up 14 to 20 hours.

"The method prevents the venom from traveling through the system in amounts large enough to overwhelm the body's natural defenses."

* * *

This is either the seventh or eighth 'cure' for TRICHOMONAL VAGINITIS which has seemed worth a paragraph. It comes from Germand and Gallagher, by way of 'Obstetrics and Gynecology' . . . The name of the powder is "TRI-VA", composed of 35 parts alkyl adyl sulfonate, 53 sodium sulfate, 2 oxyquinoline sulfate, and 10 of lactose . . . Douches are taken twice daily for 6 days, then daily for 6 days. The trich. may be eliminated in a week (as may mycotic or monilial organisms), and 43 of 45 remained absent for 3 months . . . The germs may be frightened, or 45 cases may not be enough, or the series may need repeating, or the method may be good. Mas des pues.

* * *

The earliest cases of 'CAT SCRATCH DISEASE' were forced into this column over the protests of a secretary who was a 'cat' woman, and cats just couldn't do that sort of thing (except perhaps to deserving people) . . . Now we have a 'dog' woman, and we can freely print that Daniels and Mac Murray of Washington have described 160 cases of the result of cat scratches . . . The lesions may be large and persistent for months; the general symptoms may be severe; a specific skin-test is available, but the causative factor is uncertain; and antibiotics may help speed the parting cutaneous guest.

* * *

'Minnesota Medicine' considers the high cost of malpractice insurance through the eyes of a non-medical guest editorial writer, an insurance representative. . . He mentions that physicians lack an understanding of the problem; the awards by juries are high; a waning personal relationship between doctor and patient exists; and the questions which the physician may ask himself to help correct the situation should include the following:

Do I follow the rules of my profession?

Do I follow the honest and safe practices?

Do I realize that insurance companies are subject to the same economic pressures as my own?

Are claims morally and legally honest

Are insurance costs in line with my own, considering current conditions, and not conditions of twenty years ago?

Have I opposed socialization of the insurance industry, as I have my own business, remembering when socialism gets its foot in the door in one important branch of the free enterprise system, it will soon be in the door altogether?

. . . P.S.—We still don't like the terrific rates.

* * *

We must add the inevitable correction or modification to a new idea, the "Day-light Fluoroscope" which was described here last month. .The general idea has been called "Fluoroscopic Image Intensification" . . . It seemed like a wonderful idea then, and still is, but one x-ray salesman says, — 1. It is bulky; 2. The screen iis very small; 3. The device and table costs $17,000, and the device without the table $8,750; 4. It is not for use by the practicing radiologist, and a special use must still be found for it . . . (This x-ray salesman isn't speaking from sour grapes; he can sell the device).

. .Other data on the same subject have come from another salesman of x-ray equipment, in Phoenix. (He says he is an 'avid reader' of this column. This is not exactly an invasion of privacy,

but it could lead to self-consciousness, since we have heard that two people in Chicago, a surgeon in Oakland, three people in Pasadena, a lawyer in Phoenix, some Florida orange-juice people in New York (!), and several others also read the column) . . . The kind Phoenix informant writes about the same basic idea as is used in the Westinghouse apparatus, but his "Philips I.I." equipment is a smaller 'peek-hole' device and costs less . . . His letter contains quite a few technical terms which, like Einstein's theory, are understood by only a few of us. Deleting this verbiage, it can be reported that the method was first described by Burger in 'Acta Radiologica' in 1949, and demonstrated in Europe in 1951, '52, and '53. (And speaking of demonstrations it was shown at the Memorial Hospital in Phoenix on July 19th) . . . It produces an image 1,000 times brighter than that on the usual fluoroscopic screen. The image may be viewed through a binocular attachment, or photographed with a high fidelity camera. No mirrors are used, which can be for or against the method . . . There is no doubt that both methods reduce the number of roentgen units received by the patient and operator . . . We believe that the basic idea is still looking for a place to land, and the Philips' advertising agrees by saying the equipment is "available for research and development" . . . Thanks for the data, Mr. L. . . . We predict that a use WILL be found, and that the device will be modified (and that the sun will rise tomorrow).

AMA AT SAN FRANCISCO

YOUR executive secretary was again privileged to attend the annual meeting of the American Medical Association, 103rd Session, held in San Francisco, June 21 through 25, 1954.

Medical Civil Defense

Arriving a day early, it was possible for me to attend the morning session, Sunday, June 20 of the Medical Civil Defense Conference conducted by the council on national emergency medical service of AMA in the Palace Hotel. Stafford L. Warren, M.D., conference chairman, called the meeting to order establishing the theme "What Can The Doctor Do?" Arlo Alfred Morrison, M.D., president, California Medical Association, delivered the welcome. Following in succession were these presentations: (1) The Problem of National & State Civil Defense — "What Can the State Directors Do?", by W. M. Robertson, major general, USA (Retired), director, California State Office of Civil Defense, who also presented the film, "Operation Ivy", previously seen by many of you; (2) The Local Problem and Mobile Support by Harold C. Lueth, M.D., member AMA Council of NEMS, who reviewed expectations in-and-around Chicago from a one to seven mile radius following direct hit by the "H" bomb; (3) Warning, Dispersal and Communication by Justin J. Stein, M.D., chairman, Committee on Military Affairs and Civil Defense, California Medical Association; (4) Patient and Doctor Relationship during Emergencies by Edgar M. Dunstan, M.D., chairman, Committee on Medical Civil Preparedness, Medical Association of Georgia; (5) Panic During Disaster by James Tyhurst, M.D., Allan Memorial Institution, Montreal, Quebec; and (6) The Federal Civil Defense Medical Program by Robert H. Flinn, M.D., director, Health Division, Federal CD Administration. Summarizing: I would conclude the new word of the day to be "DISPERSION". Approach of an atomic attack might be detected and limited warning time may prevail; however, one certainly, once having begun, prevention of delivery of a single missile is impossible. The only hope, therefore, is to disperse as many people as time will permit and distance will allow from heavily concentrated population centers, the target areas. This requires an entirely new approach to salvation. With the terrifying aspect of having large areas and segments of our population completely destroyed, including doctors, hospitals and allied medical installations, it behooves medical doctors throughout the land to be prepared to meet such emergency anywhere in our great country.

Conference of Presidents

Sunday afternoon was devoted to the tenth annual meeting of the Conference of Presidents and Other Officers of State Medical Associations, likewise held in the Palace Hotel, Gold Ballroom. Presided over by Louis M. Orr M.D., president of the conference, Percy E. Hopkins, M. D., president - elect, discussed "Spheres of Medicine"; followed by a panel discussion on "Doctors and the Press" from a magazine editor's point of view; by Steven M. Spencer, associate editor of the Saturday Evening Post; from a science writer's point of view, Alton L. Blakeslee, Associated Press; and from a physician's point of view, Herbert P. Ramsey, M.D., AMA co-chairman, Committee on Blood, and president of the medical society of the District of Columbia. Robert L. Stearns, director, Boettcher Foundation, Denver, and

former president of the University of Colorado, presented the subject "Are Public Relations Programs Worth What They Cost?"; and James Mussatti, general manager, California State Chamber of Commerce, discussed "Our Common Aims". While, in my opinion, the program as a whole was not up to "par" with previous annual presentations, if one could single out the most important message or thought left with those in attendance, it might possibly be the re-emphasis of the physicians' continuing responsibility to the public, aside from the medical aspect, as regards the socio-economic problems confronting the nation and its peoples today. Failure to recognize and assume this obligation is to shirk a duty and regard for good public relations.

AMA Meeting

All sessions of the House of Delegates and many of its reference committee meetings were attended by me. To spare repetition, with the knowledge that these important proceedings will be ably review and reported by our distinguished delegate, Doctor Jesse D. Hamer, I will not dwell thereon.

Respectfully submitted,
Robert Carpenter,
Executive Secretary

BOOK REVIEW

THE JEALOUS CHILD, by Edward Podolsky

In 142 pages Dr. Podolsky has encompassed many of the more serious emotional problems of children. However, the very brevity of this book seems to me its greatest drawback. While extremely sound in all that he states, nevertheless the net result would seem to me most frightening to any lay person who might choose to read this book by a psychiatrist of very great experience.

Psychiatry can be simple. It should explain and reassure. Dr. Podolsky has attempted to explain, but unfortunately he does not reassure. From the brief and cryptic foreward to the final page almost every conceivable problem of childhood is presented in its most serious ramification. Nearly every chapter begins with a startling and frightening statement which unhappily the next two or three pages do not adequately reassure or explain. Nowhere does the author give the impression that there is such a thing as a well-adjusted child who can be subjected to the average vicissitudes of life, emerge a healthy, happy and productive individual, and not present severe emotional problems at one time or another.

In conclusion, I feel that this book is neither fish nor fowl, and more important does not do justice to the experience or wisdom of its author. It is inadequate as a text-book for medical men and equally inadequate as a source of information for parents or lay people in general. I feel that Dr. Podolsky has sacrificed thoroughness for brevity and the net result is unfair to author and reader alike.

Charles P. Neumann, M.D.

RADIOTHERAPY IN ITS RELATION TO DERMATOLOGY. B. W. Windeyer, Professor of Radiology, University of London. British Med. Journ., April 24, 1954. In dermatologic practice the effect desired from radio-therapy is usually limited to the skin, so that x-rays generated at a voltage of not more than 100 kv. is the common practice. The two technics usually employed are multiple small doses for inflammatory conditions and many dermatoses, or a single large dose such as for epilation and some superficial malignancies. This author then discusses radiotherapy in inflammations and dermatoses, mentioning especially lupus vulgaris, psoriasis and pruritus; angiomata; keloid; temporary depilation. He then discusses several malignancies, among them rodent ulcer, squamous cell carcinoma, epithelioma of lip, naevocarcinoma. He discusses discrimination in the use of radiotherapy, and finally the ideal relationship between radiologist and dermatologist, which he thinks should be one of collaboration and not complete independence of each specialist.

MYOCARIAL INFARCTION IN YOUNG MEN. Country, in U. S. Armed Forces Medical Journal, May, 1954. Realizing that coronary artery disease occurs most frequently in the sixth, seventh and eighth decades, but also that it can occur in any group, this author reports his experience with myocardial infarction in patients 35 years old or younger. He has observed 14 cases of myocardial infarction in patients 35 years or younger during a period of four years. Overweight was a common finding and none occurred in underweight patients. Avoidance of obesity is advised.

SHOULDER JOINT INJURY. A beautifully illustrated article on "Dislocation of the Shoulder Joint and Infracture of the Humeral Hwad", by Robt. W. Newman of Iowa City, Iowa, appears in the Journ. of the Iowa State Med. Soc., for May, 1954.

GASTRIC LESIONS. "Duplication and other Uncommon Gastric Lesions" is the title of an article by Joseph B. Priestley of Des Moines, appearing in The Journ. of the Iowa State Med. Soc., for May, 1954.

Interesting TOPICS

RECOMMENDED READING IN CURRENT MEDICAL JOURNALS

THE LUMBAR INTERVERTEBRAL DISK PROBLEM. O. W. Jones, Jr., M.D., Associate Clinical Professor of Neurosurgery, Univ. of Calif., School of Medicine. Industrial Med. and Surg., March, 1954. A description of the structure and life history of the intervertebral disk is given as a background for understanding the development of painful conditions in the lower back. Pathological changes in the fourth or fifth lumbar disks are most frequently responsible for the production of signs and symptoms referable to this area and to one or both lower extremeties. In approximately 70% of all cases the onset of symptoms is associated with a history of specific stress or strain, whereas in the remaining group, symptoms appear slowly and intermittently. X-ray examination of the lumbar area aids in ruling out other conditions which may simulate the disk syndrome. Metastatic tumors to the lumbar spine or pelvis may produce symptoms months before the process becomes visible by x-ray shadows. There may be narrowing of one or more intervertebral disks with osteophytosis, but it does not follow that these changes are causing the painful symptoms. "Myelography should be employed in all instances in which a dislocated nucleus pulposus is suspected. In proper hands myelography carries no risk." "Any patient whose symptoms outlive a month's conservative treatment is entitled to myelographic examination." The operative result in the industrial patient compared with the private patient are uniformly poorer. This would seem to indicate that all industrial cases should be settled prior to operation, should the latter be necessary."

CARCINOMA OF THE BREAST. Importance of Internal Mammary Lymph Nodes. Handley and Thackry, British Med. Journ., Jan. 9, 1954. "For the past 150 years isolated observers have been calling attention to the internal mammary lymph chain and its importance in the spread of carcinoma of the breast." No great notice has been taken in their words, because of the lack of convincing proof. On a series of 150 cases, these surgeons have biopsied the internal mammary glands in all mastectomies. In this series, it was found that 33% of the primary growths had metastasized to the internal mammary chain at the time of operation. Of the 61 growths in the medial half of the breast, 54% had metastasized to the internal mammary chain, six of these to that chain alone, the axilla being free. Of the 93 tumors which had metastasized to the axilla, 44% had also metastasized to the internal mammary chain. It has long been thought that metastasis to this chain of lymph nodes was a late development, but this investigation demonstrated the frequency of such involvement in cases operated upon as soon as the diagnosis is made. Surgical excision and radiotherapy are the only potentially curative methods which exist at the present time for attacking the internal mammary chain. B. W. Windeyer has been developing methods of irradiating this chain with sufficient intensity. Extension of the radical mastectomy to include this chain of lymphatics is being studied also.

DISEASE AND HISTORY. A very interesting article for those who like to extend their reading beyond the immediate demands of practice, this article by Howard N. Simpson, on "The Impact of Disease on American History" in "The New England Journ. of Med., for April 22, 1954, will be enjoyable.

MYOCARDIAL INFARCTION IN RURAL PRACTICE. The Journ. of the Ind. State Med. Assn., May, 1954. Article by Dan L. Urschel, M.D., gives report on one hundred consecutive patients treated without anticoagulant therapy.

ALCOHOLISM. Geo. A. Constant, Texas State Med. Journ., March, 1954.

HIATUS HERNIA. A good discussion by Lamar Soutter, M.D., in The Rhode Island Med Journ., April 1954.

ERYTHROMYCIN IN DERMATOLOGY. Wm. B. Cohen, M.D., Rhode Island Med. Journal, March 1954.

ANKYLOSING SPONDYLITIS. (Rheumatoid Arthritis of Spine). X-ray therapy in 242 typical cases and its results are described by Sharp and Easson, in British Med. Journ., March 13, 1954.

RHEUMATOID ARTHRITIS. A evaluation of long-term treatment with cortisone. Engelman and others, California Medicine, May, 1954.

ACUTE APPENDICITIS. A study of Cases Before and After the Advent of Chemotherapy and Antibiotics, by Hamrick and Brannan. Journ. of the Med. Assn. of the State of Alabama. May, 1954.

PARATHYROID DISEASE. Laboratory Aids in Diagnosis. The fifteenth in a series of editorial reports sponsored by the Minnesota Society of Clinical Pathologists. This report is by Ellis S. Benson, M. D., of Minneapolis, and covers briefly the procedures which are of value in the clinical diagnosis of parathyroid disease.

ACUTE PANCREATITIS. Clinical Study of One Hundred Cases, article by Walter F. Becker, M.D., of New Orleans. The Journ. of the Louisiana State Med. Soc., for May, 1954.

Organization Page

CIVICS

Norman A. Ross, M.D., Phoenix, Arizona

THE ARIZONA HEART ASSOCIATION, P. O. BOX 2688, PHOENIX, ARIZONA.

The Arizona Heart Assocatiion through its local chapter recently conducted a program on "Help Yourself To Easier Work". This had so many participants and developed such wide public interest that this phase of the overall heart program will be continued and expanded in the coming year. It is offered as the answer to the physician's advice to his patients "you can carry on your housework if you take it easy".

The programming of this project warrants consideration. This organization with its wide medical support and wise medical direction, is to be commended for its part in correlating its activities with a governmental educational agency (the Land Grant College Extension Service). This makes for real economy, the use of existing facilities, as well as having a job done well.

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AMERICAN NATIONAL RED CROSS, MARICOPA COUNTY CHAPTER, 329 NORTH 3rd AVENUE, PHOENIX, ARIZONA.

The big news in Red Cross is that the State of Arizona will be well represented at the Junior Red Cross Leadership Training Center to be held at Costa Mesa, Cal., on the Orange Coast College Campus, July 25th through August 1st. Teen-agers from Maricopa County Chapter of the American Red Cross will be Robert Ashe, Scottsdale High School; Zetti Lewis, Phoenix Indian School; Betty Coleman, Phoenix Technical School; Pat Meyers, West Phoenix High School; Elizabeth Dollar, Chandler High School; and Margarita Fernandez, South Mountain High School. There will be four teen-agers from the Tucson area and three from Prescott, representing their respective Red Cross Chapters.

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EDUCATORS RECOGNIZE HEALTH ACTIVITY.

The following is in brief a **part of the platform of a candidate for the office of Arizona State Superintendent of Public Instruction.** He proposes to closely and actively correlate his department's activities with that of the State Director of Public Health in health education.

Comment: Will this become more than a campaign promise in this day of bureaucracy at any cost?

A hurried count shows that there are more than 127 school nurses in this state, that there are 60 in Maricopa County. It is common knowledge that the accepted **special training of a school nurse is a public health certificate.**

From a public health standpoint, what Arizona home does not have a school contact? Can an added copy, a change of direction, and a cooperative effort make public health nurses and nursing, review and reporting of communicable diseases, possible through the school nurse corps? We physicians report and we have retained our identity.

This school administrator in his bid for public office shows **who has the authority** and acknowledges the **educator's** responsibility.

Sixty (60) public health trained school nurses in Maricopa County. Six (6) public health nurses requested by this health officer via budget for '54.

* * *

THE ARIZONA DIVISION OF THE AMERICAN CANCER SOCIETY, INC., 1429 NORTH 1st STREET, PHOENIX, ARIZONA.

The educational program of the Arizona Division, American Cancer Society is for the moment directed toward the controversial subject of lung cancer. Speakers and panel discussions are now the subject of service and business groups' meetings.

The Hammond-Horn report developed by the American Cancer Society and reported at the American Medical Association meeting in San Francisco is the current material. You, doctor, may have a copy of the complete release by writing the state office of this society.

ARIZONA TUBERCULOSIS AND HEALTH ASSOCIATION, 111 E. WILLETTA, PHOENIX, ARIZONA.

This is the current program of this Association:

1. A study of the present status of patients discharged from the State Tuberculosis Sanatorium.

2. Cooperative program in health education for the Navajo people in Arizona using the portion of Christmas Seal Sale from Apache and Navajo Counties now held by the State Association.

3. Work Conference on Patient Services based on the Denver Pilot Study and observations at the National Jewish Hospital.

Also programmed is close relation between the Arizona Tuberculosis and Health Association and The Arizona Trudeau Society. Dr. Harold Kosanke, President of the Arizona Trudeau Society will appoint one of the Society's members as an advisor to each of the local tuberculosis associations in the state.

A central committee was appointed to develop a cooperative effort by the Arizona Cancer Society, the Arizona Heart Association and the Arizona Tuberculosis and Health Association to promote Routine Hospital Admission X-rays.

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UNITED CEREBRAL PALSY ASSOCIATION OF CENTRAL ARIZONA, INC., 106 NORTH CENTRAL AVENUE, PHOENIX, ARIZONA.

This association completed a successful Postmen's Walk Campaign for the solicitation of funds on May 13, 1954, with an approximate gross receipts of $13,000.00 This will continue the seven-point program and allow for further amplification of services during the forthcoming year to Cerebral Palsy victims.

The United Cerebral Palsy Association's seven point program is:

1. Expedite clinical diagnosis.
2. Conduct a state-wide survey of services available to Cerebral Palsy victims.
3. Carry out a broad program of parent education.
4. Provide direct aid to needy facilities for equipment, apparatus, aids, etc.
5. Continue liaison with other agencies.
6. Commence compiling a library of Cerebral Palsy materials and literature.
7. Conduct arts and crafts programs for prevocational, recreational and socialization purposes, as well as subsidizing salaries of trained professional personnel to existing facilities and agencies.

For 1954 a mobile van equipped to provide physical, occupational, speech therapies and the services of a medical social worker to Cerebral Palsy victims unable to use existing facilities by reason of transportation difficulties is being considered.

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ARIZONA SOCIETY FOR CRIPPLED CHILDREN AND ADULTS, INC., 207 ARIZONA TITLE BLDG., PHOENIX, ARIZONA.

Contributions totaling more than $93,000 were given to the crippled children's program during the recently concluded fund raising campaign of the Arizona Society for Crippled Children and Adults.

This year's Easter Seal contributions were greater than any previous collections by the Society, topping the 1953 total of $76,000 by approximately $17,000.

Funds contributed to the crippled children's program of the Society will be used to finance the various activities of the organization, including the Samuel Gompers Memorial Clinic in Phoenix, Homecrafters adult rehabilitation in Tucson, a special speech program in Yuma, the statewide itinerant clinic program of diagnosis and therapy and county programs of individual assistance to handicapped persons.

The crippled children's program of the Easter Seal group will be continued during the coming school year through the cooperation of the Crippled Children's Division of the Arizona Department of Public Welfare and local medical societies.

Five, five-week clinics are to be held in Yavapai, Gila, Yuma, Cochise, and Graham Counties. The program will provide daily physical, speech and occupational therapy for handicapped youngsters in addition to training of parents in special techniques of handling crippled children, especially cerebral palsied youngsters.

An itinerant clinic program similar to the one recently concluded will be carried out in Mohave, Coconino, Navajo, Apache, Greenlee, Pima and Pinal Counties. Provision for more thorough followup on recommendations of the medical staff is planned. The dates for these clinics have not been set.

ARIZONA *Pharmaceutical* PAGE

CUSTOM MADE OR READY MADE

By Doctor Joseph A. Zapotocky

TODAY, PHARMACEUTICAL MANUFACTURERS HAVE PREPARED AND MARKETED SO MANY OF THE STANDARD PRESCRIPTION NEEDS OF THE PHYSICIAN THAT HE HAS AT HIS COMMAND A MYRIAD OF COMBINATIONS OF DRUGS AND SELDOM USES THE PHARMACIST'S SKILL IN COMPOUNDING. IN MANY CASES, THE READY-MADE COMBINATIONS ORIGINALLY WERE FORMULAS WHICH HAD RATHER UNIVERSAL APPEAL AS EFFECTIVE THERAPEUTIC AGENTS. MANUFACTURERS CAPITALIZED ON THE POPULARITY OF THESE FORMULAS, AND COMPOUNDED AND MARKETED THEM UNDER A VARIETY OF TRADE NAMES. SOME OF THESE TRADE NAME PRODUCTS ARE SO WELL KNOWN THAT THE CONTENT OR COMPOSITION OF THE PRODUCT IS SECONDARY. MIXTURES CONTAINING A THERAPEUTIC AGENT WITH PHENOBARBITAL, POTASSIUM IODIDE, CODEINE SULFATE, ATROPINE SULFATE, EPHEDRINE, DIPHENYLHYDRAMINE. AND NUMEROUS OTHERS ARE WELL KNOWN TO ALL. THE ABILITY OF THE LOCAL PHARMACIST TO PREPARE EXTEMPORANEOUS COMBINATIONS IS OFTEN OVERLOOKED AND A READY-MADE, TRADE-NAME PRODUCTS PRESCRIBED IN PREFERENCE. BECAUSE IT IS EASIER TO WRITE PRESCRIPTION FOR A TRADE-NAME THAN TO WRITE OUT THE NAME AND QUANTITIES OF THE INGREDIENTS FOR THE PHARMACIST TO COMPOUND THE PHYSICIAN SACRIFICES SOME OF THE FREEDOM OF CHOICE HE WOULD OTHERWISE HAVE. A MANUFACTURER CANNOT HOPE TO MEET THE NEEDS OF EVERY PHYSICIAN OR CAN CATALOG LISTINGS OF PRODUCTS SATISFYING THE NEEDS OF THE PHYSICIAN WELL VERSED IN THERAPEUTICS. THE VERSATILE PRESCRIPTION WRITER CAN BE SATISFIED ONLY BY A SKILLED, WELL-TRAINED, UP-TO-DATE PHARMACIST. YET THIS SERVICE IS NOT USED TO ITS FULLEST EXTENT. ONLY ONE OUT OF EVERY FIVE PRESCRIPTIONS WRITTEN TODAY REQUIRES ANY COMPOUNDING IN THE PHARMCY.

EVEN THOUGH VERY LITTLE COMPOUNDING IS DONE, IT SHOULD BE REMEMBERED THAT THE PHARMACIST MUST STILL USE HIS TRAINING AND KNOWLEDGE FOR THESE SO-CALLED POUR OUT OR COUNT OUT PRESCRIPTIONS. HE MUST BE FAMILIAR WITH THE CHEMICAL AND PHYSICAL PROPERTIES OF THE DRUGS HE DISPENSES SO THAT HE MAY HAVE KNOWLEDGE OF THEIR STABILITY AND PROPER METHODS OF STORAGE BOTH IN THE PHARMACY AND IN THE HOME OF THE PATIENT. HE MUST BE ABLE TO RECOGNIZE SIGNS OF DECOMPOSITION IF POSSIBLE. HE MUST BE AN EXPERT AT TERMINOLOGY SO THAT HE CAN RELATE U.S.P., N.F., N.N.R., COMMON NAMES, CHEMICAL NAMES, AND BE CERTAIN THAT HE IS DISPENSING THE EXACT DRUG CALLED FOR ON THE PRESCRIPTION. THE DOSAGE, ESPECIALLY RANGE OF DOSAGE. SIDE EFFECTS, SYMPTOMS OF TOXICITY, AND MODES OF ADMINISTRATION ARE JUST A FEW OF THE OTHER PROBLEMS WHICH FACE THE PHARMACIST. HE MAY FIND IT NECESSARY TO ADVISE A PATIENT TO DRINK A CERTAIN AMOUNT OF WATER WITH HIGHLY ALKALINE SUBSTANCES SUCH AS DIPHENYLHYDANTOIN SODIUM (DILANTIN SODIUM) IN ORDER TO DECREASE GASTRIC IRRITATION, OR TO POINT OUT THAT CERTAIN DRUGS COLOR THE URINE AND THUS PREVENT UNDUE ALARM. HE MAY FIND IT NECESSARY TO CHECK ON THE DOSE OF A PRESCRIBED DRUG IF HE BELIEVES IT TO BE EXCESSIVE, OR TO CHECK ON THE AUTHENTICITY OF A PRESCRIPTION IF HE SUSPECTS FORGERY. THESE ARE JUST A FEW OF THE FACTORS THE PHARMACIST AUTOMATICALLY CONSIDERS EVEN THOUGH THE PRECRIPTION REQUIRES NO COMPOUNDING.

IN THE COMPOUNDED PRESCRIPTION, THE PHARMACIST CAN GIVE THE PHYSICIAN AN EVEN GREATER SERVICE. HERE THE DOCTOR CAN CHOOSE BOTH THE KIND AND AMOUNT OF A BARBITURATE, IODIDE, SULFONAMIDE, ANTIHISTAMINE, OR ANTIBIOTIC HE MAY WANT TO USE IN A COMBINATION. HE IS NO LONGER LIMITED TO ONE COMBINATION OR ONE CONCENTRATION HE CAN CHOOSE WHATEVER HE FEELS IS MOST ADVANTAGEOUS FOR EACH SPECIFIC PATIENT. THE COLOR AND THE FLAVOR OF THE COMPLETED PRESCRIPTION CAN ALSO BE ALTERED TO SUIT THE TASTES OF BOTH OLD AND YOUNG. MEDICATION NEED NOT BE UNPLEASANT OR UNSIGHTLY.

Woman's Auxiliary

WOMAN'S AUXILIARY TO THE AMA CONVENTION REPORT JUNE 1954



Mrs. Brick P. Storts

THE Woman's Auxiliary to the American Medical Association met in San Francisco June 21st through June 25th for their 31st annual convention. Headquarters were at the Fairmont Hotel.

More than 2,000 women registered, representing 66,000 members in every state, the District of Columbia, Alaska and Hawaii.

Work shop sessions were held on Monday at the Mark Hopkins Hotel. National Committee chairmen led these round table discussions of Auxiliary projects in legislation, mental health, nurse recruitment, Civil Defense and Today's Health. We were urged to study and learn about the Auxiliary program in order that we may do something about good Public Relations and good Health Education. The two go hand in hand. Together we progress. It was pointed out that the magazine "Today's Health" is published by the AMA, at a great financial loss, in the interest of good health education. It is the best liaison between medicine and the lay public.

Mrs. Richard Stover, National Chairman of the Auxiliary's "Today's Health" committee presented awards to the states winning the subscription contest for 1953-54. The following states received prizes: Group I (State auxiliaries with a membership of 1 to 400) Utah; Group II — (State auxiliaries with a membership of 401 to 1,000) Arizona, and Group III — (State auxiliaries with a membership of 1,001 to 2,000) Kansas. It was a thrill to accept this award for Mrs. James Soderstrom of Whipple, Arizona our "Today's Health" Chairman. A total of 38,189 subscriptions were credited to the Auxiliaries extensive promotional efforts. This figure represents an increase of 5,683 over the previous year.

Mrs. Ross P. Daniel of Beckley, West Virginia, the Auxiliary's Mental Health Chairman pointed out that only 6 states did not have Mental Health Chairmen during the past year. This phase of auxiliary program is new in emphasis and scope. Mental health is foremost in the minds of the American people today.

It leaves no scares but it embraces many phases of mental illness. Mrs. Daniel introduced Dr. Leo Bartemeier of Detroit, Chairman of the AMA Committee on mental health who spoke on this subject. He urged doctors' wives to volunteer their services to public elementary schools in the interests of mental health. He proposed that we (1) assist teachers in supervising youngsters in the halls, on playgrounds and at lunch periods. (2) Be on call to care temporarily for children who have no one at home to look after them, after school or in an emergency. Mental health begins in childhood, he explained. With so many working mothers someone else should provide the material affection their children fail to receive during their hours of employment. Teachers are busy and can become distraught at the end of a full day.

It was pointed out during the panel on Nurse Recruitment that it is a problem around the world. The films have been sent to 3 foreign countries and an outline of our program to England for study. Nurse recruitment affords a means of solving the problem of nursing supply and demand. Since this program was launched in 1945, State and County auxiliaries have given more than $250,000 toward

nurse education. A total of $80,000 in scholarships and loans have been given to nursing students. A total of 504 Future nurses' Clubs with 26,280 members have been organized by the various auxiliaries. These groups are designed to give high school students an opportunity to learn about nursing as a career.

During the public relations round table it was brought out that public relations includes every doctor's wife. We are looked to for leadership in our community, especially in matters pertaining to health. Public relations is every doctor and his family's business. It must remain a personal, individual problem. We must have good public relations among ourselves if we are to exhibit good public relations to our community.

A tea honoring Mrs. Leo J. Shaefer, President and Mrs. George Turner, President-elect, was held on Monday afternoon in the Gold Room of Hotel Fairmont. Hostesses were members of the Woman's Auxiliaries to the San Francisco Medical Society and the California Medical Association. Lovely orchid floral arrangements were used as table decorations.

General meetings were begun on Tuesday at 9 a.m. and continued until Thursday noon. National officers and chairmen reported on their work and State Auxiliary presidents reviewed the accomplishments of their groups in the past year. Election and installation of new officers took place on Thursday morning.

The annual dinner was held on Thursday night at the Hotel Fairmont. A highlight of the evening was the skit entitled "There is a Doctor in the House" put on by the members of the Woman's Auxiliary to the San Francisco County Medical Society.

Mrs. Leo Shaefer, of Salina, Kansas, president, presided at the luncheon on Tuesday, which honored past presidents and the president elect, Mrs. George Turner of El Paso, Texas. This event was held in the beautiful Venetian Room of the Hotel Fairmont. A fabulous fashion show of furs was presented by Saks Fifth Avenue. Dr. Lynn T. White, Jr., historian and president of Mills College, gave the main address on "The Changing Past." He explained that modern historians, in trying to reconstruct the voiceless past, are making strides toward understanding human activity apt to prove of more lasting importance than those made in medical science. He estimated that 95 per cent of human history is unrecorded, because previously historians limited their work to written records, which were the product of the so-called aristocracy. This policy did not change until about the time of the French revolution. Thus history of the 95 per cent of humanity remained submerged.

The Wednesday luncheon honoring Mrs. Leo Shaefer and Mrs. George Turner was held at the Mark Hopkins Hotel in the Peacock Court. Mrs. David B. Allman, a past president, presided. Dr. Edward J. McCormick immediate past president of the AMA, was guest speaker. Guests of honor were officers of the AMA and members of the Advisory Council to the Woman's Auxiliary.

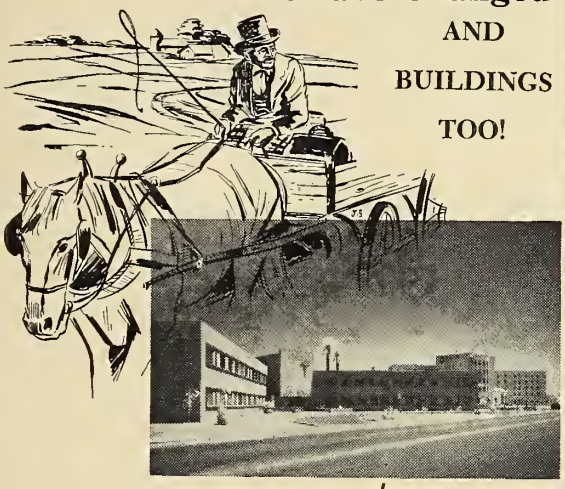
Dr. McCormick congratulated the auxiliary on behalf of the AMA and stated that the group had been of great help to him during the past year. He felt that the auxiliary should be larger — there are too many bachelors in the AMA. He stated that the women have proved a tremendous force in aiding the AMA in its effort to preserve the democratic principles of our country by contributing to the AMEF, selling "Today's Health" magazine, interest in nurse recruitment, rural health, mental health, etc. He urged us to carry on in these activities. He pointed out that the AMA has done more to call to the attention of the American people the problems facing them than any other group. The auxiliary is a vital part of this group.

Mrs. Shaefer presented a check for $5,472 to the American Medical Education Foundation. The check was given in memory of deceased members of the women's auxiliary. A memorial fund of $2,477 in honor of Corrine Keene Freeman, National president of the Auxiliary in 1932 who died last August was also given to the AMEF.

Two $100 presentations were made to the World Medical Association and the Committee on Careers in nursing by the Auxiliary.

Dr. George F. Lull, AMA secretary, presented AMEF Awards of Merit to the Woman's Auxiliary of the AMA, the Woman's Auxiliary to the California Medical Association, and the Woman's Auxiliary to the Chicago Medical Society. The AMEF was organized in 1950 to stimulate contributions from members of the medical profession to the nation's 79 approved medical schools. Hiram W. Jones, executive secretary of the foundation, said that $804,658

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has been contributed to the foundation by the medical profession this year.

The following officers to the woman's auxiliary to the AMA were installed at the closing session on Thursday morning. Mrs. George Turner, Texas, president; Mrs. Mason G. Lawson, Arkansas, President-elect; Mrs. Harlan English, Illinois, 2nd vice-president; Mrs. A. M. Okelberry, Utah, 3rd vice-president; Mrs. Clark Bailey, Kentucky, 4th vice-president; Mrs. Thomas d'Angelio, New York, 5th vice-president, Mrs. Carl Burland, California, Constitutional secretary, Mrs. George Garrison, Oklahoma, treasurer. Board of Directors: Mrs. Harold Johnson, New York; Mrs. Alfred Burnside, South Carolina; and Mrs. Henry Garnjobst, Oregon. Mrs. Leo Shaefer also becomes a member of the board. Three other women are serving the second year of their term on the board; Mrs. Truman Caylor, Indiana; Mrs. Paul Craig, Pennsylvania, and Mrs. Raymond Wayland, California.

The new officers were installed by Mrs. Roscoe Mosiman, a past national president and honorary member of the Auxiliary.

Mrs. George Turner in her presidential inaugural address, said that during her regime she plans to emphasize juvenile delinquency, prevention and traffic safety. She stated that delinquency is the result of a mental condition. On safety, she said that it is as important to save healthy lives as well as diseased ones. She pointed out that health leadership falls on the doctor's wife. The people in her community look to her for guidance and help in health problems.

At the Friday morning conference national officers, directors and committee chairmen met with state presidents and presidents-elect to hear a brief outline of the programs for 1954-1955.

Reports of officers and committee chairmen for 1953-54 will be given in detail in the next issue of the Bulletin — may I urge you to read about your organization. You will be justly proud of the accomplishments.

Arizona was represented at the convention by the following delegates: Mrs. Roy Hewitt, Tucson president-elect; Mrs. Paul Causey, Phoenix; Mrs. Jesse Hamer, Phoenix, National Historian and Mrs. William Shepard, Prescott, president of Yavapai County. As your state president, I acted as chairman of delegates from Arizona; read the president's report; served as time-keeper and have reported to you on the convention. Mrs. B. P. Storts, President.

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The Board of Medical Examiners of the State of Arizona at a regular meeting held Saturday, July 17, 1954, issued certificates to practice medicine and surgery in this State to the following doctors of medicine:

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Attention Doctor: Keep your 1954 Medical Directory up-to-date. Similar lists will be published quarterly following each meeting of the Board of Medical Examiners. Tear out this listing and keep it in your Directory Booklet.

VALUABLE ARTICLES IN CURRENT JOURNALS

(Beamed at the General Practitioner)

OFFICE HEMATOLOGY: Fourteenth in a series of reports on "Laboratory Aids to Medical Practice," from the Minnesota Society of Clinical Pathologists. Minnesota Medicine, April, 1954. Refers to routine blood tests performed on outpatients in the doctor's office. The doctor himself is responsible for the reliability of these procedures. Realize the limitation of the office laboratory and freely seek hematological consultation. A minimal hematologic screening for every new office patient should consist of: (1) hemoglobin or hematocrit; (2) total leucocyte count; (3) peripheral blood smear. An erythrocyte count gives little information and has great personal and technical error; it may well be omitted unless cell indices are to be done.

PENICILLIN AND ITS PROBLEMS. W. D. Paul, in South Dakota Journ. of Med., April, 1954. Penicillin is the only "teen-ager" in the fast growing family of antibiotics. "By common medical consent it is the drug of choice in the treatment of an impressive number of the bacterial infections most frequently encountered in practice." It would be strange if penicillin failed to develop certain teen-age problems. Penicillin reactions and the extent to which the population of the country has been sensitized to penicillin constitute one of the major problems. It seems likely that the efficiency of penicillin against various acute and chronic infections will be further enhanced by improved knowledge of dosage forms and administration.

THE CRUSHED HAND. M. L. Mason, M.D., F.A.C.S., Chicago. The Journ. of the Mich. State Med. Soc., May, 1954. The author has "tried only to stress the most important general principles which underlie the initial care" of the crushed hand. These include early care under adequate operating conditions; careful mechanical cleansing with soap and water; excision of tissue destined to necrosis; deep repair of nerves and reduction of fractures; tendon repair only in exceptional cases; closure of wound at first operation; molding of the hand on a splint in the position of function under a compression dressing.

CARE OF THE INJURED HAND. Michael L. Mason, M.D., Chicago, in The Journ. of the La. State Med. Soc., March, 1954. He discusses features of the care of open wounds of the hand which are important. Operative care of the wound is to be carried out under operating room conditions, even for trivial wounds. Operations on the hand should be in a bloodless field secured by a blood pressure cuff. Surgical procedures are discussed.

CARCINOMA OF THE CERVIX AND CONTROL OF VAGINAL DISCHARGE. By Dominic J. Pontarelli, in Deleware State Med. Journ., May, 1954. The foul smelling and irritating

chronic vaginal discharge associated with carcinoma of the cervix is treated by this author by a vaginal cream containing allantoin 2%, sulfanilimid 15% and 9-amino-acrodine, 0.2%, in a water miscible base with an acid pH (Allantomide Vaginal Cream Improved of National Drug Co., Philadelphia). Usually about ten days application of the cream is sufficient. The first application is applied by the doctor, and the patient carefully instructed in the technic of further applications.

PEPTIC ULCER. Current Treatment, From the Dept. of Medicine, Univ. of Chicago, article by Joseph B. Kirsner of Chicago, in The Journ. of the Iowa State Med. Soc., June, 1954. Discusses the dietetic and special methods used, and it is interesting that irradiation is given a prominent place, this procedure having been used in 1200 patients during the past 17 years. Ten daily applications are given to the acid secreting portions of the fundus and body of the stomach over fluoroscopically outlined anterior and posterior fields. This almost invariable produces an anacidity and healing of the ulcer with no recurrence during the period of achlorhydria.

ACNE VULGARIS. R. A. Osbourn, M.D., Medical Annals of the District of Columbia, March, 1954. Called "the scourge of youth" by this author. Acne should be treated early and each patient should be carefully evaluated from the standpoint of general health, foci of infection, and evidence of endocrine imbalance. Local therapy is important but must not be overdone. Fractional doses of x-ray is a valuable adjunctive treatment.

ACNE VULGARIS, Modern Treatment. Paul R. Kline, Journal of the Med. Soc. of N. J., March, 1954. A good companion article for the one by Osbourn. Many etiologic factors may be concerned in acne vulgaris, — some internal and some external, requiring combined systemic and local treatment. Vitamin therapy is stressed. A panthenol cream containing sulfur and resorcinol monoacetate is discussed. Hormones and x-rays are needed in selected cases.

THE MODERN TREATMENT OF ACNE VULGARIS. James W. Burks, Jr., Journ. of the La. State Med. Soc., March, 1954. He discusses general and local measures, emphasizing kutapressin, a new adjunctive drug in the treatment of acne.

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ARIZONA MEDICINE

Journal of ARIZONA MEDICAL ASSOCIATION

VOL. 11, NO. 9 SEPTEMBER, 1954

TABLE OF CONTENTS

OFFICERS

ARIZONA MEDICAL ASSOCIATION, INC., DIRECTORY 6A
WOMAN'S AUXILIARY DIRECTORY 6A

ORIGINAL ARTICLES

TREATMENT OF UNDESCENDED TESTES 323
J. B. Chastain, M.D., and L. K. Newlin, M.D., Columbus, Georgia
THROUGH A SMALL SANATORIUM LOOKING-GLASS 327
Wm. H. Oatway, Jr., M.D., Altadena, California
ACUTE PNEUMONITIS DUE TO ACCIDENTAL EXPOSURE TO MERCURY VAPOR 335
George W. King, M.D., Tucson, Arizona

MEDICAL PROBLEMS

PHOENIX CLINICAL CLUB 336
Louis G. Jekel, M.D., Phoenix, Arizona

EDITORIAL

INDUSTRIAL MEDICINE 345

TOPICS OF CURRENT MEDICAL INTEREST

RX., DX., AND DRS. 346
Guillermo Osler, M.D.
TUBERCULOSIS SYMPOSIUM 343
AMERICAN COLLEGE OF CHEST PHYSICIANS 343
INTERESTING TOPICS—Recommended Reading in Medical Journals 344, 357
W. Warner Watkins, M.D., Phoenix, Arizona
REMINDER ABOUT SOCIAL SECURITY 345
OSTEOPATHS APPROVE ON-CAMPUS VISITS 349
WATCH "MEDIC" ON TELEVISION 350
ORGANIZATION PAGE — Civics 351
Norman A. Ross, M.D., Phoenix, Arizona
ARIZONA PHARMACEUTICAL PAGE — Therapeutic Aids 353
Doctor Joseph A. Zapotocky, Tucson, Arizona
ARE MALPRACTICE CLAIMS PREVENTION PROGRAMS WORTH WHILE? 355
Howard Hassard, San Francisco, California
ANNOUNCEMENT OF THE VAN METER PRIZE AWARD 354

WOMAN'S AUXILIARY

A LETTER FROM THE PRESIDENT 354
Mrs. Brick P. Storts, Tucson, Arizona

DIRECTORY

LABORATORIES 27A
DRUGGISTS DIRECTORY 29A
SANATORIUM DIRECTORY 31A
PHYSICIANS DIRECTORY 35A

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ARIZONA MEDICINE
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VOL. 11, NO. 9 SEPTEMBER, 1954

Original ARTICLES

TREATMENT OF UNDESCENDED TESTES*

J. B. Chastain, M.D., L. K. Newlin, M.D.

Columbus, Georgia

CONTROVERSY as to the relative values of medical and surgical treatment of undescended testes began several years ago and has continued to the present time. Different observers have advised the institution of hormonal therapy at ages varying from 3 years to puberty. (1, 2). Others have united in condemning medical treatment of undescended testes but have been divided in opinion as to the proper time for surgery.(3, 4).

There are several reasons for instituting treatment in patients having undescended testes. Since the body temperature is too high for the production of sperm in an undescended testicle, sterility may result if involvement is bilateral. Sterility occasionally occurs with unilateral involvement when trauma or infection has damaged the descended testicle. Undescended testes are also known to be especially prone to torsion and to injury. Cosmetic disadvantages and possible psychic trauma are additional reasons for treatment of such patients.

The purpose of this communications is to (1) present the results of the medical treatment of 27 patients having undescended testes, and (2) bring out some of the arguments which may be presented for both medical and surgical treatment.

Patients reported and discussed in this paper have undescended testes as isolated defects and are otherwise normal.

The authors wish to acknowledge the assistance of Dr. Morris S. Fleischman, Brigham City, Utah.

INVESTIGATION

This investigation took place at a large school operated by the federal government for the education of Navajo Indian children. All 1301 boys between the ages of 11 and 18 years were examined for undescended testes as part of their entrance physical examination. From this number 27 boys (2.08%) were found to have either unilateral or bilateral undescended testes. This incidence for Navajo Indians closely parallels that of the white population. Five (18.5%) of the 27 patients had bilateral involvement. About 10% of cases of undescended testes in the white population have been reported as being bilateral.(5).

All 27 patients had four separate examinations under different conditions by two physicians. A special effor was made to avoid migratory testes which may be found at times in abnormal positions such as the root of penis or in Scarpa's triangle but which move into the scrotum permanently at puberty.

These patients were all given chorionic gonadotropin, 500 units intramuscularly, 3 times weekly for 6 weeks. This drug is the gonadotropic substance secreted by the placenta and derived from human pregnancy urine. Through similar to anterior pituitary gonadotropin, chorionic gonadotropin has a more specific action. The latter drug stimulates the production of androgenic hormone by acting directly on the interstitial cells of the testes.(6).

At the end of the 6 weeks treatment, a total

of 9 patients (33.3%) were found to have obtained excellent results with this therapy. In addition to the benefits derived by these 9 patients, treatment resulted in the descent of one testicle in each of 2 patients having bilateral involvement. Results were rather easy to classify since most of the patients could be placed in one of two categories, those benefitting greatly, and those benefitting little or none.

Twelve of the younger patients began developing pubic hair and mild genital growth as the treatment neared completion. Of these 12 patients who developed secondary sex characteristics, 6 responded to treatment and 6 did not.

Of the 27 patients treated, 9 patients had clinically detectable inguinal hernias associated with undescended testes. Testes failed to descend in all 9 patients having hernias.

Table I shows the individual response to treat-

TABLE I
PATIENTS TREATED WITH CHORIONIC GONADOTROPIN

Patient	Age	Involvement & Position of Testes before treatment	Pubertal Changes	Descent with treatment
S.B.	17	Right-Mid canal	Well established	No
C.C.C.	16	Right-Low canal	Well established	No
L.S.	15	Left-Mid canal, atrophic	No	No
D.L.	15	Right-Mid canal	No	Yes
D.L.B.	15	Right-Mid canal, atrophic Right ing. hernia	Early	No
K.D.	15	Right-Low canal	Well established	No
K.S.B.	15	Bilateral-Left, low canal Bilateral-Right, high canal Right ing. hernia	No	Left-Yes Right-No
T.B.	15	Right-Low canal	No	No
T.Y.	14	Right-Mid canal Right ing. hernia	No	No
L.J.	14	Right-High canal	Well established	No
R.J.L.	14	Bilateral-Left, high canal Bilateral-Right, Abdominal	No	Left-Yes Right-No
W.C.	14	Bilateral-Left, low canal Bilateral-Right, low canal Ing. hernia, bilateral	Early	Left-No Right-No
A.B.	14	Left-abdominal	Early	No
B.D.	14	Bilateral-Left, high canal Bilateral-Right, high canal Ing. hernia, bilateral	Early	Left-No Right-No
T.K.Y.	14	Bilateral-Left, high canal Bilateral-Right, high canal	No	Left-Yes Right-Yes
D.Y.	13	Right-low canal	No	Yes
N.B.	13	Right-Mid canal Ing. hernia, right	No	No
H.C.	13	Right-Mid canal	No	Yes
S.W.	13	Right-Mid canal	No	No
W.T.	13	Right-Mid canal	Early	No
R.B.M.	13	Right-Low canal	No	Yes
E.T.B.	13	Left-Low canal	No	Yes
A.A.	12	Left-low canal, atrophic Ing. hernia, left	No	No
G.C.T.	12	Right-Mid canal	No	Yes
D.B.	12	Left-Low canal	Very Early	No
J.Y.N.	12	Right-Abdominal	No	Yes
D.S.	11	Right-Low canal	No	Yes

ment. It is readily seen that patients with pubertal changes are less apt to benefit by hormonal therapy than are younger patients. Also patients with abdominal or "high canal" testes are less apt to respond than others whose testes are nearer the scrotum.

As has been suggested,(2) the 18 patients not responding to chorionic gonadotropin were given testosterone, 20 mgm. intramuscularly, 3 times weekly for 4 weeks. There was no apparent benefit from testosterone in any of the 18 patients who had failed to respond to chorionic gonadotropin.

About 3 months after cessation of treatment with chorionic gonadotropin, one of the patients benefitting by this therapy (H.C.) showed regression of the affected testicle to a low canal position. The other 8 patients who had responded to chorionic gonadotropin were unchanged. The younger boys who had developed secondary sex characteristics while under treatment began to lose these features about 3-4 months after cessation of testosterone therapy.

ADVANTAGES OF HORMONAL THERAPY

Routine use of the medical treatment of undescended testes reduces the number of patients requiring surgical correction of this defect. Since surgery is usually not performed in any case that might be readily amenable to medical treatment, this is the most persuasive argument that can be presented. Treatment with chorionic gonadotropin has given good results in 20 to 50% of patients reported, the benefits depending on the age and type of involvement. In general, patients past puberty and patients having intra-abdominal testes (cryptorchidism) show poor response to either chorionic gonadotropin or testosterone. Thompson and Heckel reported beneficial results in only 2 of 34 patients having intra-abdominal testes.(7) Intra-abdominal testes are usually atrophic and nonfunctional, therefore surgical results are no better.

In some cases the results obtained from surgical correction may interfere with the normal blood supply to the testes and result in poor testicular growth and development.

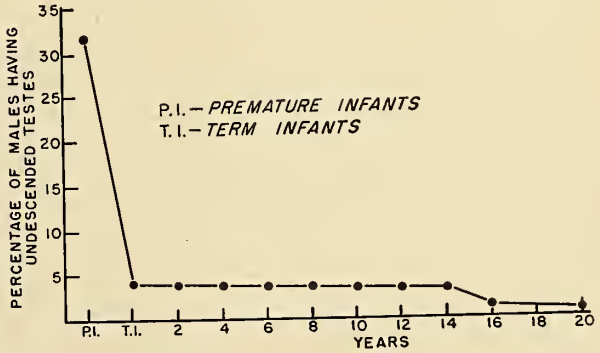
As in one case reported in this paper, an occasional patient will apparently improve under treatment only to have the affected testicle regress toward the previous abnormal position after treatment is completed. The improvement with hormonal treatment is of value, however, since this response contraindicates surgery and suggests that the affected testicle will descend permanently at puberty.

Although inguinal hernias are very commonly associated with undescended testes, a good portion of these hernias are undetectable clinically and would not require operation. Medical treatment of patients having undescended testes associated with inguinal hernias is not feasible in most cases since the patient cannot hope to avoid surgery. The use of medical treatment in such patients is primarily of academic value.

It is generally agreed that testes which descend after hormonal therapy would descend spontaneously at puberty unless hypopituitarism with resultant hypogonadism should exist. Most physicians prefer not to wait until puberty for operative correction of undescended testes, however, and hormonal therapy is of great value as an indicator of those who will require surgery. The principal argument for early treatment (3 to 6 years) is based on the fact that the physician is able to determine rather quickly which patients will not respond to medical treatment and will require surgical correction of anatomical disorders preventing testicular descent. Most physicians using hormonal therapy believe that medication should be instituted after age 10 or 12 and before puberty is reached. There is apparently no difference in testicular size whether medical or surgical treatment is used to effect a cure.

ADVANTAGES OF SURGICAL TREATMENT

Some observers do not recommend hormonal therapy and even advise operation before the age of 1 year.(8) It is felt that therapy is of no value if it accomplishes only that which would occur spontaneously at puberty.



Incidence of undescended testes at various ages.

Opponents of hormonal therapy believe that migratory testes and other errors in diagnosis are responsible for the good results often reported from the use of medical treatment.

Some of the patients who supposedly show a good response to hormonal treatment will begin to regress within a few months after treatment is discontinued.

Since various writers have reported the coexistence of inguinal hernias in up to 85% of patients with undescended testes, it would appear that operation is almost inevitable even though a patient might be apparently cured of the latter condition.

The argument for early surgical treatment is supported to some extent by writers who feel that malignant tumors are more common in undescended testes. However, this view has been challenged by other competent observers.

It has been claimed that testes which do not descend until after puberty are often deficient in spermatogenesis. Again, this is a controversial point.

Advocates of surgical therapy fear that hormonal treatment may result in excessive genital growth, adverse effect on testicular function in later life, and premature closure of epiphyses.

Though not a scientific point, the economic consideration is important. Many patients are given hormonal therapy and then require surgery. If hormonal therapy fails, the expenditure for satisfactory treatment is considerably higher than if surgical correction had been performed initially. Too, some patients are protected by hospitalization insurance which will cover surgical treatment but not medical treatment.

SUMMARY

1. Entrance school examinations on 1301 Navajo Indian boys between the ages of 11 and 18 years showed 27 (2.08%) to have either unilateral or bilateral undescended testes.

2. Nine of these 27 boys (33.3%) responded favorably to six weeks treatment with chorionic gonadotropin.

3. The 18 patients not responding to gonadotropin were given testosterone for 4 weeks without benefit in any case.

4. Since results as a general rule were unsatisfactory, hormonal treatment is not recommended for the following patients having undescended testes:

(a) Patients having hernias associated with undescended testes

(b) Patients past puberty

(c) Patients having intra-abdominal testes

If these patients are excluded, at least half of the remaining patients should respond to hormonal therapy and not require surgery.

REFERENCES

1. Wilkins, L.: Endocrine Disorders in Childhood and Adolescense. 1st ed. Springfield, Thomas, p. 150, 1950.

2. Rubin, M. J.: Undescended Testes (Cryptorchidism):, in Mitchell-Nelson Textbook of Pediatrics, Waldo E. Nelson, Editor. 5th ed. Philadelphia, Saunders, p. 1243, 1950.

3. McKirdie, M.: Surgical Problems in Pediatrics. West. J. Surg., 56: 622, 1948.

4. Longino, L. A.: Optimum Age and Procedure of Choice for Elective Surgery in Infancy and Childhood. J. Arkansas M. Soc., 48: 113, 1951.

5. Farrell, J. I.: Anomalies of the Testicle, in The Child in Health and Disease, Clifford G. Grulee and R. Cannon Eley, Editors, 2nd. ed. Baltimore, Williams and Wilkins, j. 778, 1952, P. 778.

6. From product description given by Sharp and Dohme, Philadelphia.

7. Thompson, W. O.; and Heckel, N. J.: Endocrine Treatment of Cryptorchidism. J.A.M.A., 117: 1953, 1941.

8. Koop, C. E.: Undescended Testicle. Differential Diagnosis and Management. Med. Clin. North America, 36: 1779, 1952.

THROUGH A SMALL SANATORIUM LOOKING-GLASS*

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Introduction

THE problem which faces a physician in a small, non-research tuberculosis sanatorium is how to pile up sufficient information on a subject to make it of value for a medical report. I have seized on the device of combining information on a number of subjects into one paper.

The title might be, as a result, like that of an Italian drama of 1935, "Ten Topics in Seach of an Author". It should show how tuberculosis looks, in the mirror of a small Southern California Tuberculosis hospital.

The sanatorium is located near Pasadena and is a non-profit institution licensed for 52 beds, and with an average census of 51.7 patients throughout the past two years. The only restrictions on admission are that the patients preferably come from the Los Angeles area; that they be cooperative; that they have treatable disease; and that they be able to pay the charge which is set for them. Age is not especially a bar; race is no bar; and the presence of other diseases is not an obstacle, since we always have several diabetics and several patients with some circulatory difficulty. The patients pay about 70% of the cost of care, and endowments and gifts pay the other 30%. Our patients are recommended from all sources, and we have an open surgical staff.

The treatment program is an active one. Briefly, it consists of modified bedrest; high protein and vitamin diet; regulation of exercise; a generalized chemotherapy program; pneumotherapy as adjunct treatment when indicated; surgery, with collapse and resection therapy as indicated; partial rehabilitation before discharge; and a tendency for the patients to leave silghtly sooner than the optimal therapy period.

This small and miscellaneous report may be of some value in contrast to reports from other larger institutions, in other areas of the country. If usage of a method is a measure of its success, then our few figures may reflect recent and current progress. From here on the report will consist of the reasons for saying "we find" and "we believe".

* Paper for Medical Session at the Western Tuberculosis Conference, Salt Lake City, 4:15 P.M., September 18, 1953.

No. 1 — Use of Chemotherapy

Use of **specific anti-tuberculosis drugs** is intensive and almost routine. It is based on the premise that if the patient has active tuberculosis and is infectious he should be treated with the best possible combination of drugs for as long as currently seems necessary, in conjunction with whatever other methods seem necessary, until he is non-infectious and his lesions are as nearly healed as possible . . . In 1950 and '51 streptomycin and PAS were given to 82% of the patients, and in 1952-53 to 98%.

The three drugs which are used at the present time are **streptomycin, some form of PAS,** and **isoniazid.** Two or three of the 'mycin' drugs and two or three of the chemicals are held in reserve for occasional use in certain cases.

We feel at the present time that the safest way to give **streptomycin** is in combination with equal parts of dihydrostreptomycin. This usage is mostly based on theory, but it should be sound. The combination drug is given at the rate of 1 gm. twice a week, though we occasionally use 1 gm. or ½ gm. per day during the acute phase which follows discovery of a case.

A para-amino-salicylate is used at the rate of 1 teaspoonful three times a day for a total dose of 12 to 15 gms. per day. We usually use the inexpensive sodium PAS powder. If it is not tolerated we use a coated granule called Pasna, and occasionally a calcium PAS called Pasara. Almost all patients can tolerate one of these three. The only advantages of calcium PAS are its lack of sodium content and the absence of a taste.

Isoniazid is used at the rate of 50 mg. three times a day daily. We have discontinued the use of iproniazid since August, 1952.

The **duration of chemotherapy** here reflects the modern feeling that prolonged use is best. A course of therapy now averages a year or so. If surgery is used, most cases receive 4 to 6 months of pre-op. drugs, and 6 to 8 afterward (depending on the case, of course). This falls short of certain research regimens, but is a sharp increase from the duration 1 and 4 years ago . . . The increased duration often

necessitates therapy up to the day of discharge, or even beyond. It means that gastric cultures are taken during brief gaps in therapy, and have less significance than they should. It is a compromise which we are forced to make.

For the past 10 months we have used **streptomycin, PAS and INH together** in almost every case. This is done because of a feeling that all three should result in the best clinical effect and the least hazard of resistance when combined. This is partly based on theory (and can be figured out mathematically according to the relative resistance to each drug) and is partly based on practical results from a few series. We see no reason for witholding isoniazid since the additive effect may be considerable, and when withheld, the later duration of usage might be too short to be of value. We have been assured by the Research Director of a noted drug house that this is a wise usage and is increasing. The Veterans' Administration has no protocol for three drugs at present, though several California V. A. hospitals are using three drugs on cases not included in protocol.

The only exception to the use of all three drugs is during an allergy to one of them (which will be discussed), and a resistance to one of them.

The **total experience** which we have had with chemotherapy in the past 5 years includes 400 cases. Two hundred sixty of these have been in the past 3½ years. I will mention briefly the major aspects of the use of these 3 drugs in the past 3½ years, using the headings of **Tolerance and Toxicity, Allergy,** and **Resistance.**

(a) The **tolerance and toxicity for streptomycin** has been excellent. The only symptoms have been an occasional headache and tension feeling, and occasional numbness or paraesthesias around the mouth in the few hours after injection. We have had no 8th nerve involvement, either auditory or vestibular, during the 3½ years . . . There has been only one case of allergy to streptomycin (¼ of 1% of all cases) and this happened to occur in a case also allergic to PAS . . . **Resistance** to streptomycin has been very rare; this may be partly due to the method of giving drugs, but may also be due to the fact that most of the patients have negative bacterial findings before reaching the total dosage which would be hazardous. A recent problem has been the admission of patients who have been treated at home with peculiar and unsatisfactory regimens, though we have not yet reached the sad status of some Veterans Hospitals where 50% of the admissions are already resistant to streptomycin.

Sensitivity tests to streptomycin have been made on every positive sputum or gastric after 6 months of combined therapy, or on admission if there has been previous therapy. Two cases had resistant strains on admission; one had SM therapy without PAS before and during his early sanatorium care and was resistant after 3 years; and two developed SM resistance during our therapy after 18 months duration, or about 1.5% of those treated.

(b) The **tolerance and toxicity to PAS drugs** has been mentioned. It consists of gastro-intestinal disturbances and occasional headache in about 20% of the patients. A shift of preparations allows all but 1 or 2% to continue . . . We have had a total of 10 cases in which there has been transient vertigo which has apparently been partly due to the use of PAS. It usually disappears immediately on discontinuance of the drug and very often does not recur. It still produces a fear that the cause might be streptomycin, but it usually occurs early in the course of treatment . . . **Allergy to PAS** is of more importance. A mention of it was made, with Dr. Reding of Barlow, in the report of the Barlow-La Vina series in 1952; a further summary was made and published in June, 1952, in "Arizona Medicine", and 12 cases were then described, the largest series which had been reported. Eight of the nine attempted were successfully desensitized. Four more of the next 170 patients have been allergic, with a constant percentage of 2.4% in each series. All are being desensitized. An odd angle is that 15 of the 16 cases were women, while the san. pop. ratio is 20 women to 16 men . . . The **resistance to PAS** compounds is of less importance than resistance to the other two drugs, and it is not certain how the laboratory resistance correlates with clinical effectiveness. Bacilli may become resistant to PAS to some degree between 5 and 18 months. . There is apparently a protective effect by streptomycin, just as the reverse is true. We have also reported that resistance to PAS is not constant, and later cultures may show less or no resistance.

(c) **Tolerance to isoniazid** and **toxicity from it**

are relatively pleasant subjects. The drug very rarely produces any intolerance. Its effect on the various parts of the nervous system is negligible in most patients who receive only 150 mgms. per day (which seems just as effective clinically as larger doses). The first 10 cases given isoniazid and the first 10 given iproniazid were checked very intensively in the spring and summer of 1952. Isoniazid produced some stimulation of the vegetative and central nervous system but this was rarely important; it became even less important when we stopped studying the cases carefully and asking the patients twice a week for the symptoms (we eliminated the so-called iatrogenic, or suggestive effect) . . . Iproniazid was definitely toxic and our small series helped discourage the drug manufacturer from continuing its use, since the report coincided with others. We actually had a case develop a toxic psychosis of a paranoid type and, fortunately, it was about 2 weeks after the first report on the subject in the literature. Both drugs should be watched carefully when given to patients whose kidney function is considerably reduced. Blood levels may then cause symptoms because of obstruction and elevation . . . We have not noted allergy to isoniazid, but others have thought that with extreme rarity such a condition might exist, just as depressions of the bone marrow, etc., are said to occur.

Resistance to isoniazid was studied carefully in the 20 early cases in our hands. All had positive sputums to start with. At the end of 8 to 11 weeks of therapy, twelve remained positive and one of them was resistant to 10 mcg. After 15 to 17 weeks only seven cases were positive, and all were sensitive including the previous resistant strain. One year later 13 of the 20 are still negative, 3 are dead, 3 had hopeless disease, and 1 can be called a partial clinical failure (a positive GA culture when off drugs) . . . The sputum and gastric cultures which have been examined since the first series of 20 cases have shown only rare resistance to INH, partly due to the high percentage of cases converted to negative by chemotherapy and surgery, but probably in part due to the combination of the drugs. Sixty-two patients, or 71% of the population, were given INH or IPNH during the first six months, 134 by August 1953, and the usage has now reached 100%. Three patients developed resistance to INH after many months of use; one other developed it and reverted to sensitive; and two were admitted moderately resistant.

The results of our particular type of chemotherapy program have seemed to confirm two earlier warnings and suggestions concerning the use of streptomycin. I was disturbed enough to write a letter to the J.A.M.A. in 1947, warning against the indiscriminate use of streptomycin. Two of the reasons were the resistance which could be produced, and the hazard which a resistant case could be in infecting other individuals with a resistant strain. Later on, with Dr. Bogen in 1950, a broader but controlled use of the combination of streptomycin and PAS was suggested . . . Perhaps the usage is now too broad, but only hopeless, custodial, and aged cases would have seemed to escape the need for the drugs. Minimal disease, pregnancy, and several other conditions are added indications for chemotherapy.

No. 2 Use of Pneumotherapy

Pneumotherapy, in its medical sense, includes the use of intrapleural pneumothorax and pneumoperitoneum.

You all know the tremendous use of **pneumothorax** therapy in days gone by, when other operations and treatments were not available, and the decline of its usage so that it is anathema in certain clinics and even certain areas of the country. It still has its indications, though they are few. Fortunately for some of the former complications, chemotherapy is effective against effusions, empyema, etc. I have made a summary of the relative usage at our Sanatorium each July for the past 4 years. There has been only one patient on the list each July, never more than 2 at any time, and a total of only 6. Two were admitted with the collapse and 2 were abandoned as failures.

Pneumoperitoneum has had a vogue in most sections of the country, though it is still regarded with coolness in some areas. The greatest vogue has been in California, especially in the northern portion. It is an operation which can easily be started, easily administered, but unfortunately it is very difficult to stop it. The patient and the physician, for various reasons, often cling to it. It may be difficult to shift to a more definitive and localized operation because of its presence. We have used it fairly often because many of our patients have bilateral disease and many need the help of such a pro-

cedure until they are ready for resection or collapse treatment. I have also made a summary for the past 4 Julys which shows the relative usage. In July 1950 there were 22 cases on the list (44% of census); in 1951 there were 16 (or 32%); in 1952 ten (or 20%); and this July there were nine (18%) . . . The decline is apparent, but we may have reached a plateau of sound usage. About ⅓ are abandoned upon use of surgery, or due to intolerance, failure, or (rarely) complications.

It is quite possible that many of our patients could have received the same effect from bedrest and chemotherapy, but one hesitates not to use PNP, though we now wait longer before starting it and then add it on as an adjunct method, usually temporary. The relaxation of the diaphragm must be definite or refills are discontinued. We have found that **emphysema** is the chief obstacle of pneumoperitoneum, but as one scans through the years it is evident that emphysema also blocks the best effects of thoracoplasty and extrapleural pneumonolysis.

No. 3, Use of Surgical Therapy

Phrenic nerve interruptions are only occasionally done, are never of the permanent type, and are almost entirely used as a temporary procedure at the time of resection. As resection usage has increased at La Vina, the use of phrenic crushes has also increased . . . One primary phrenic crush, for therapy, has been done each year. Two secondary crushes were done in 1951, one in 1952, and seven have been done so far in 1953 — a significant increase.

Extrapleural pneumonolysis has always been a good operation in theory. It leaves the chest wall intact, produces a localized collapse of considerable extent, and by actual measurements of respiratory function causes a very small loss in reserve or utility. I had good experience with the procedure at the Wisconsin General Hospital about 1940, when it was often used for collapse of a lesion contralateral to another collapse measure, often in patients who could stand no loss of lung function. We almost invariably proceeded to fill the space with mineral oil, using it as a simple blockade to prevent expansion . . . We have used extrapleurals for the past 4 years, but perforce in a small series. We have routinely filled the spaces with oil, and check and warn the ex-patients each year concerning the presence of oil and the need for special observation. There is no doubt, as reported by Cutler in Philadelphia, that chemotherapy has made this procedure much more safe because of the lack of fluid and empyema formation. Our series shows the decline in the number of procedures in the past year or so, because of the replacement of the operation by a resection. It is not that we "'think the less of it, but that we love the other more" . . . Eleven extrapleurals were done in 1950; 4 in 1951, with 2 others tried; 6 in 1952, and one more attempted; and only one tried and none completed in 1953. Four of the lyses done between 1950 and '52 were after lobectomy. One of the 21 spaces was filled with wax and two were filled with oil at operation, and the remainder were converted to oleothorax from 6 to 10 weeks after surgery. 16% were technical failures; 84% were early therapeutic successes; and 70% are listed as late successes. Emphysema caused most of the late failures. There were **no** empyemas.

Thoracoplasty has decreased in usage almost everywhere, and I hope it continues to do so. I dislike and resent the deformity of the chest and spine which occurs, the post-op. care which is required, and often not successful, the loss of functioning lung (and lung function), etc. Some surgeons still prefer it as a time-tried and tested operation which is predictable. I do not think that this is sufficient reason in most cases for its use. The application of primary thoracoplasty to patients here in the past 4 years has been as follows — 3 first and 3 second stages in 1950; 3 first, one second, and one third stage in 1951; 2 first and 4 second stages in 1952; and 2 first and 1 second stage in 1953.

Thoracoplasty has been used as a **secondary** procedure to fill the space after resections of lobes, in which the lung will not fill the space satisfactorily and without stretching. I believe that such usage will also be more often avoided in the next few years by the use of prostheses which will allow the chest wall to remain intact. The list of 'secondary' thoracoplastics is as follows—there were 2 first stages in 1950; 5 in 1951; 7 first and one second in 1952; and only 2 first stages and 1 second in 1953 . . . Various modifications of the simple thoracoplasty have not caught on. The complete Semb apicolyses were abandoned a dozen years ago. The constoversion operation with struts, etc., has not been taken up widely since Overholt described it. A group in New Orleans has tried a Mexican operation in which the lung

iis tied down beneath the thoracoplasty. This procedure was suggested as far back as 1938, (and possibly before) but was not continued.

Resection is the fair-haired boy of surgery at the present time. It is the most logical operation, in that removal of tuberculous lung tissue is the best disposal of such tissue if it can be done with relative safety. We have used it increasingly as a primary, and occasionally as a secondary, procedure and consider it the best operation. Our surgeons do wedge resections occasionally, segmentals with moderate frequency, lobectomies about as often, and even the drastic pneumonectomies. Some clinics, notably that of Dr. Gale and Curreri in Madison, Wisconsin, have done more than 900 resections of various sorts. Their indications are very broad and some of their cases are salvage. Their mortality is only a few percent, even including patients who die incidentally in the first 6 months. Their conversion and rehabilitation figures are above 80% . . . Our series for the past 4 years has shown the change in frequency of usage. Segmental resections were not done until 1952; there were 8 done then and 8 so far in 1953. Pneumonectomy figures are few and irregular; 2 were done in 1950; none in '51; 3 in 1952; and 1 this year. Lobectomy has been done more often, in spite of the increase in segmentals; there were 7 in 1950; 12 in 1951; 14 in 1952; and eleven so far this year (for a total of 44) . . . In 1950 and '51, resections were done slightly more often than primary thoracoplasty; in 1952-53 the ratio is 4 to 6 times as often.

We also occasionally do **peculiar operations.** By 'peculiar' I mean an operation which is unusual, or seems so because of its newness. A sub-costal lucite plombage operation has been done on an older man, in which case there was contralateral disease, an impossible situation for resection, and a failure to do extra-pleural pneumonolysis. The ribs and spheres were taken out about 10 weeks after the operation, but if we had it to do again we would not subject him to the second operation, since Wilson and others in Boston suggest that the spheres may remain in such a location without hardship and that if the periosteum is left on the outside of the rib, the rib does not atrophy (this posulate is not accepted by Los Angeles surgeons) . . . Dr. Cotton of Los Angeles has done an "odd" operation: he removes an upper lobe, then produces an extrapleural space. The condition is continued as a pneumothorax and eventually converted to an oleothorax. He also inserted a plastic sponge, and hollow and solid lucite spheres under the same circumstances. His series of more than 120 cases of extrapleural pneumonolysis after lobectomy is a respectable one . . . Drs. John Jones, Robinson and Meyer do an operation after resection of tissue in the upper lobe, where a filling of the space is necessary from the parietes. The procedure consists of the removal of about 2 cm. of the 2nd, 3rd, and 4th ribs next to the transverse processes posteriorly, and the same amount of resection anterolaterally. This produces a flattening of the chest in the upper third and is called a "waterfall" thoracoplasty.

We have used **fibrinolytic compounds** (SK-SD) to help clear clots after an extra pleural pneumonolysis, and have done it with safety and without too much inconvenience by keeping the air pressures low, observing the patient twice during the first day by fluoroscopy, and by having a needle ready to put in. . This has not required the insertion of a tube in half a dozen cases.

No. 4 An Analysis of Morbidity and Mortality

The death rate in the Sanatorium has been low and irregular. It might be of some value to analyze the causes of death in the past four years. I will discuss it according to cause of death, the age of the patients, and the type of operation when surgery was involved. In 1950 one patient died, for a rate of 1.4%; in 1951 3 died, for a rate of 4.3%. Two of these were after surgery and both were lobectomies. In 1952 4 died, for a rate of 5.7%; three of them died from tuberculosis. In 1953 3 have died, for a rate of 4.3%. Two of these died from causes unrelated to TB or surgery. The average age of those who died of TB, was 52 years. The average age of those who died from surgery was 58 years. The average age of all patients has been 45 years.

No. 5 Prevention of Tuberculosis As It Involves the Sanatorium

Our sanatorium has taken an attitude concerning **several aspects of prevention** which seem to concern the sanatorium.

The laws of the state of California have made **reporting** of evidence of tuberculosis compulsory by physicians and sanatoria, and we approve of this. They also have included,

for about 6 years, the enforcement by counties of a quarantine for patients known to be tuberculous, with the amount of isolation to depend somewhat upon the condition of the patient. Actually, Los Angeles County has only attempted to enforce the law in the past year and a half, but is doing so quite vigorously and with a fair degree of diplomacy and success. We believe that this is necessary, and agree that if it protects contacts and forces patients to sanatoria, both the patients and the public will profit. (I have personally taken this attitude in the years when I was in private practice, on a university staff, and now as a sanatorium director, so it cannot be said to be prejudice of position).

The use of **chemotherapy at home** is subject to considerable abuse. I do not think that this can be changed more than a small amount. Abuses occur from overdoses and lack of control of the patient by general practitioners (who do not always understand the limitations on dosage and duration); by chest specialists who cannot always control their patients; and by health departments which give out-patient therapy (and which sometimes allow the patient to get lost or out of control) . . . Pre-sanatorium or pre-operative chemotherapy is legitimate provided it is under strict guidance according to modern means.

Mass x-ray examination of the chest can be an important method of prevention. It can recognize the infected and diseased patients, and thus allow treatment and protect contacts. It is certainly legitimate to use this method in schools of higher education and even high schools, though the yield of cases is relatively small, especially in certain areas of the U. S. It can be used with profit in businesses and industries, and even such cross-sections as unions . . . A more valuable approach in which the yield is often high is routine films of patients at the time of admission to general hospitals. If such a survey is organized thoroughly, and such methods as those used at the Los Angeles County Hospital for x-raying non-ambulatory patients are used, a high percentage of the admissions can be x-rayed . . . Communitywide surveys have a great advantage over no x-rays at all, but they have certain flaws which are beginning to appear. The cost is considerable; the organization and the community cooperation must be top-notch; and the individuals in the community who do not volunteer for such examinations are usually the ones with the highest incidence of pulmonary disease. Furthermore, certain sections of the country have found that the yield is so small that other methods of approach might be better utilized (though this point is one open to settlement in the future) . . . The examinations of patients in mental hospitals and prisons, as well as the turnover in the county and city jails, is a highly profitable field. Control of these patients after the diagnosis is made is another difficult but exceedingly valuable portion of tuberculosis control. Dr. Zahn of Seattle has reported success in this latter situation.

Vaccination with BCG has a limited but very definite usefulness in prevention in a community. I have been involved in the problem since 1928 at Saranac Lake, from the bacterial standpoint; through the tests of its protective effect and safety with Dr. Rosenthal of Chicago; through the installation of its use in a university medical school and nurses training school (Wisconsin) where it has been used for 12 years since; up to recent months when the chief chore has been to help explain and repeatedly defend the procedure . . . The concern of a sanatorium with BCG can be threefold, — It can be used to vacinate nurses who are negative to tuberculin tests and who are out of contact with patients for a period of 4 to 6 weeks. Since all of the nurses at La Vina have had positive skin tests before starting work here, that usage has not been great, but it can be used in sanatoria where nurses' training programs are under way . . . The second use is to provide vaccination service for contacts and families of patients. If the sanatorium has a service which covers this situation, in an out-patient department, it can be of considerable value. From our experience, in a small sanatorium, we offer vaccination to relatives two or 3 times a year. Invariably we obtain the vaccine (from Chicago), have 15 or 20 volunteers, and end up with 0 to 3 vaccinations. A third sanatorium use of BCG is the help which a physician can provide to nursing groups, or medical schools, or laboratory technicians in the area . . . Private use of the vaccine in the Los Angeles area is almost non-existent and this is unfortunate. It is a procedure which can be used best by the health department; it requires the interest of

an enlightened and evangelistic teacher or medical director . . . Incidentally, BCG is now available for interstate shipment and in a long-lasting form from Dr. Rosenthal's 'Research Foundation' in Tice Laboratory at the University of Illinois. The material is lyophilized (freeze-dried) and is usable for several months. It can be shipped simply, without refrigeration, and 1 cc. (enough to vaccinate a dozen people) costs only about $3.00.

No. 6 Changing Age of Admissions

During the past 3 years the average age of admissions each month has varied somewhat, but generally increased so that during two months last winter the average age of admission was 63 years. I have a graph which shows this change, and it is a dramatic one and significant from the standpoints of case-finding and therapy . . . The mortality rate for tuberculosis has been definitely lowering, as is well known. The morbidity rate, or case-report rate, has not kept pace, and in some areas is staying the same or increasing. This may be due to the methods of case-finding, and it is quite possible that by these methods older individuals are being examined for the first time in large numbers. From our experience it is not due to the fact that the older individuals have sufficient funds to go to a non-profit institution, and it is not entirely due to the efforts of the health departments to send older patients for sanatorium care . . . The age of a patient limits somewhat the therapy program; it is not possible to do pneumotherapy or collapse therapy to exactly the same extent or freedom as in younger age groups. We have given pneumotherapy, especially PNP, to patients between 50 and 60 years of age, and have noted no difference in tolerance or effects except for the possible slightly greater presence of emphysema in the older age group. Surgery has been reported in many institutions as possible in individuals between the ages of 60 and 70 . . . The cases, however, are definitely less eligible from the standpoint of the lesions usually found in an elderly person, and the response to surgery.

No. 7 Finances of a Small Sanatorium

Large gifts to the endowment are very rare in our recent experience. The solicitation of medium-size and even small gifts has become more difficult; it requires much greater effort to raise even a portion of the amount which 5 to 10 years ago was easily obtained. The tax set-up of individuals is obviously responsible, since generosity has not changed. The tax set-up of corporations is such that many of them could give 5% of their income at about 20c on the dollar if they cared to do so. This has not been widely publicized, and in our case has not been taken advantage of as it has in Chicago, where the non-profit institutions have been organized, and the corporations have also been organized for regularly increasing subscriptions which they hope will reach 1% . . . Income from patients has been variable, since following the year 1950 the Blue Cross and Blue Shield have progressively eliminated TB from coverage. Private insurance companies, unions, and state compensation have helped to fill this gap, but it will not be completely filled until catastrophic' policies are the rule.

The cost of care has gradually risen, with wages, food, utilities, insurance, and supplies all contributing to the increase. Nevertheless, the cost of care per day per patient averages about $8,50, which compares favorably with other tuberculosis institutions here and elsewhere.

No. 8 Education of the Patient and the Public Concerning TB

It seems to us that the public is only slightly more educated about tuberculosis, and the available places and methods of treatment, than it was 10 to 20 years ago. If one has a personal interest, or TB touches home, that person becomes interested and eligible for education. The best that can be done is to continue the publicity with the hopes of making the public slightly conscious of the general methods of care, sanatorium facilities, etc. It is legitimate to use everything from animal stories and unusual occurrences to beauty contests. . I have heard it said, however, that you can only shoot the medical director once for publicity purposes.

Education of the patients is an easier task, since they are in a position to be exposed to all sorts of notes, outlines, etc., from the front office. The theory of Trudeau Sanatorium, back in the teens and twenties, was that the patient had the disease and had to know about it. They once limited their admissions to people who could be educated, and usually had nurses and physicians and medical students as half of their patient population. At La Vina we use

a descriptive but simple outline for patients concerning infectious precautions, rest, exercise and rehabilitation, chemotherapy and collapse therapy, and urge the patients to read it repeatedly. We quiz them on it during rounds, and urge the patients to ask questions. We send out a note about once a month, with news items, comments on broken techniques, humorous items, etc., which sugar-coats the pill. Occasionally when breaches of technic are bad, as reported by the nurses or seen by the staff, patients are talked to directly or sent a note which they can re-read. Relatives are consulted concerning the patient's illness, and the patient and relatives are given a discharge lecture with a plan for the future as far ahead as one or two years under adequate medical care.

Nurses are given lectures, in a series of 4 or 5, once a year. There is a small library of books on nursing care, and the nurses are urged to read certain of these publications. They also read the patient's outline so they know what the patient is to do. We have in preparation a special outline for the nurses in this institution, composed from our own standpoint.

Our sanatorium is adding its small bit to the improved training of practical nurses. We take 3 vocationals ('Vokies') for 3 weeks per month. They have a classroom and an instructress provided by the Pasadena TB Ass'n. and they learn to care for, and to respect, but not fear the disease.

Our chief aim in education is to teach the fundamentals and essential details of infectious disease precautions to the nurses, other contact employees, the patients, their relatives, and anyone else who will listen. 'Isolation technic' can be very simple and regular if used routinely . . . I will not bother to mention methods as they apply to patients, their environment, and their contacts, but there are a few items which bear mention, — An odorless detergent antiseptic, called 'Amphyl', is available for use on floors, flat surfaces, furniture, etc. Alcohol in a dispenser (or squirt bottle) is not only valuable for the hands but easy to use, and rubbing alcohol is as good as ethyl. Ultra-violet wall-lamps may add to the sanitation of a potentially contaminated room. There are other antiseptics coming up, I've heard.

No. 9 The Broad View

The data and ideas which are presented and discussed suggest quite a few conclusions, —

Diagnosis and therapy are not static. Better methods are becoming evident through the years, and even during months and weeks.

The reduced mortality rate for tuberculosis is hopeful, yet almost as many die of the disease as are reported to have polio.

The morbidity rate is still high, with huge numbers of unreported cases working out their fate (and that of their contacts) unrecognized. I'm sure that this rate will fall, but we must help knock it down in spite of the inertia which overconfidence can cause. Some sanatoria are failing, some are changing, but in many places there are not enough beds to care for the sick.

We're moving along, but I always keep in mind the warning of the late Dr. Fred Heise of Trudeau Sanatorium. He was never unusually optimistic, but he paradoxically warned the students away from his own specialty, since the disease "would wane in 10 years and be gone in 20." The year was 1928, and we still have work to do.

ACUTE PNEUMONITIS DUE TO ACCIDENTAL EXPOSURE TO MERCURY VAJOR

George W. King, M.D.
Tucson, Arizona

MEDICAL literature on mercury poisoning commonly refers to the acute or chronic effects of a mercury salt on the various tissues of the body, usually the kidney, or of the toxic and physiological effects of diuretic, antiluetic or other organic mercury containing compounds on the body. Acute and chronic poisoning from metallic mercury usually occurs in industry where it has been found among workers in quicksilver mines, in industries extracting other metals with the use of mercury, among makers of felt hats, mirrors, scientific instruments etc. The physical characteristics of metallic mercury make it especially dangerous in these industries, since it is slightly volatile at ordinary temperatures, and it boils at 356.99C. Due to volatility it is readily absorbed by inhalation of its fumes (von Ottingen), and these small particles of mercury are extremely powerful protoplasmic poisons. The following is a case of accidental exposure to mercury vapor in which the inhaled chemical set up an acute pneumonitis, and in which prompt vigorous treatment effected complete recovery.

Case Report: D. L., a 29 year old amateur prospector stated that on February 21, 1954 he mixed about one ounce of "gold sand'" with about one teaspoonfull of metallic mercury and heated the resulting amalgam in a clay dish over the kitchen stove with the intension of evaporating the mercury and recovering the pure gold. The kitchen was descrbied as measuring about 10 by 10 feet with ventilation provided by a partially open door leading to the outside. Both the patient and his wife were in the kitchen for most of the hour that it took to reduce the mercury amalgam to a small black residue, and they both noticed a metallic taste which they attributed to the burning paint on the clay dish. About one hour later the patient lit a cigarette, and was seized with a sudden fit of coughing that lasted for several hours, until a physician was summoned.

When first examined the patient was found to be acutely ill, vomiting, febrile, slightly cyanotic and very dyspneic. He was unable to take a deep breath due to a severe burning oppressive pain over the trachea and anterior chest. A portable chest x-ray taken on admission to the hospital revealed, "Bilateral bronchopulmonary abnormality probably indicative of aspiration and exudative type bronchitis". A standard chest x-ray taken two days later showed, "Improvement is obvious, but active appearing infiltration due to the chemical pneumonitis is still present bilaterally." Other laboratory tests with the exception of a white blood count of 12,000 and a marked shift to the left were within normal limits. The urine at no time showed albumen, pus or blood, and one determination for heavy metal content was negative.

The patient was placed in an oxygen tent and started on dimercaprol (BAL) in peanut oil, 2 cc. every four hours for the first day, and then every eight hours for the second day. He was placed on penicillin and dihydrostreptomycin by injection, and then tetracycline 250 mgm. every six hours as soon as his vomiting stopped. Allevaire® was added to the oxygen inhalations, and positive pressure oxygen with the Bennett valve seemed to give him relief.

The patient became afebrile on the 4th hospital day, and was discharged on the 10th hospital day. He was re-hospitalized 5 days later with an acute coughing paroxysm that could not be controlled at home, but x-rays at that time showed complete clearing of the pneumonic process and he was discharged the next day. At the final examination the patient was found to be entirely well, with a vital capacity of 100%. Urine examination was entirely negative.

SUMMARY

An interesting case of acute pneumonitis apparently due to accidental exposure to mercury vapor in the home has been presented. The manner of treatment is described with the patient making a complete recovery. The warning implied by this case as to the improper handling of mercury seems clear.

From the Department of Medicine, Tucson Clinic, 110 S. Scott.

REFERENCES

"Poisoning". W. F. von Ottingen, M.D., Ph.D. Paul B. Hoeber, Inc. p 385. 1952.

Tasker Howard, M.D. Practice of Medicine, TICE. Vol. VIII. P. 175, 1952.

The Pharmacological Basis of Therapeutics, Goodman and Gilman. The Macmillan Co., P. 732, 1940.

PHOENIX *Clinical* CLUB

The Case History in this discussion is selected from the Case Records of the Massachusetts General Hospital, and reprinted from the New England Journal of Medicine. The discussant under Differential Diagnosis is a member of the staff of the Massachusetts General Hospital. The other discussants are members of the Phoenix Clinical Club.

MASSACHUSETTS GENERAL HOSPITAL

PRESENTATION OF CASE

FIRST ADMISSION. A fifty-three year-old man was admitted to the hospital because of shortness of breath.

Ten years prior to entry the patient had an episode of severe chest pain, for which he spent ten weeks in bed; he was told that he had a "coronary." After this he had occasional episodes of precordial pain and occasional cramps in the left leg, both of which followed exertion. Three years prior to admission he first noted exertional dyspnea. He was given aminophylline pills and later digitalis, with some improvement; the digitalis was stopped six months prior to entry. During the six months before admission he gradually lost energy and "drive," became moderately anorexic and complained of a growing epigastric pain. Three weeks before admission his dyspnea became more severe, and orthopnea, ankle edema and a depression in the urinary output were subsequently noted.

The patient had had a chronic nonproductive cough for many years. There had not been any nausea, vomiting, hemoptysis, change in bowel habits or urinary symptoms. There was no history of hypertension or rheumatic fever. His father had died of heart disease at the age of forty.

Physical examination revealed a chronically ill man with obvious respiratory distress. The neck veins were distended. Scattered rales were heard at the bases of the lungs porteriorly. The heart was enlarged, with the apical beat palpated 14 cm. from the midsternal line in the sixth intercostal space. There was a Grade II, blowing, apical, systolic murmur and a marked apical diastolic gallop; the aortic second sound was equal in intensity to the pulmonic. An enlarged, smooth liver was palpated, the edge being 2 cm. below the costal margin. There was mild sacral and ankle edema.

The temperature was 98.6 F., the pulse 120, and the respirations 30. The blood pressure was 120 systolic, 95 diastolic.

The urine had a specific gravity of 1.024 and was normal. Examination of the blood revealed a hemoglobin of 13.4 gm. and a white-cell count of 10,700, with 36 per cent neutrophils. The sodium was 130 milliequiv., the chloride 95 milliequiv., the potassium 4.8 milliequiv., and the carbon dioxide 26.6 milliequiv. per liter; the nonprotein nitrogen was 30 mg., the total protein 5.72 gm., with a normal albumin-globulin ratio, the thymol turbidity 0.8 units, the alkaline phosphatase 4.2 units and the serum cholesterol 216 mg. per 100 cc. A blood Hinton test was negative. Roentgenograms of the chest demonstrated generalized cardiac enlargement involving both the right and left ventricles, a tortuous, somewhat sclerotic aorta and accentuation of the vascular markings in the lungs. An electrocardiogram showed a normal sinus rhythm at a rate of 100, a PR interval of 0.14 seconds, QRS interval of 0.17 second and left-bundle-branch block. The T waves were low and upright in Lead 1 and upright in Leads 2,) and AVF; the R waves were small in Leads V_1, V_2, V_3 and V_4 and broad and slurred in Lead V_6; the S waves were broad in Leads V_1, V_2, and V_3.

Treatment with digitoxin, mercurial diuretics, aminophylline, low-salt diet and ammonium chloride resulted in a diuresis and considerable improvement in the dyspnea. On the fourth day the patient felt a dull aching, nonpleuritic-type pain in the right upper anterior part of the chest, and coughed up dark-red blood. This was followed several hours later by a severe precordial pain, accentuated by respiration; a pleural friction rub was found 5 cm. below the left nipple. Roentgenograms of the chest and the electrocardiogram were unchanged. Dicumarol was added to the treatment. He recovered from the episode of pain quite rapidly. He continued, however, to have occasional episodes of pain in the precordium and anterior portion of the chest of brief duration, with radiation to the left shoulder, and occasional attacks of paroxysmal nocturnal dyspnea. He was discharged

after a month only slightly improved; he had been able to remain out of bed in a chair for only short intervals.

Final admission (two weeks later because of abdominal pain). In the interval the patient had done fairly well at home on a bed-to-chair regime; he had not had any respiratory difficulty or chest pain, although he had had to sleep at a 30° angle. Three days prior to entry pain and tenderness in the left lower quadrant of the abdomen suddenly developed. The pain persisted and on the following day involved the left flank and testicle. The pain gradually decreased in intensity, being almost completely absent on the morning of admission, when the left lower-quadrant pain returned and was associated particularly with changes in position. During this three-day period the dyspnea, paroxysmal nocturnal dyspnea and precordial distress returned. There had not been any vomiting, diarrhea or constipation. He had not had any urinary symptoms except for a decrease in urinary output during the three-day period; urinalysis had been negative until the day of admission, when it showed 15 to 20 red cells per high-power field in the sediment.

Physical examination revealed a pale man who was sweating slightly and who complained of pain in the lower abdomen when he moved. The neck veins were distended. The lungs were clear. Examination of the heart was unchanged from the previous admission. A nontender liver edge was palpated four fingerbreadths below the costal margin. There were no other palpable organs or masses in the abdomen and no areas of tenderness. There was no costovertebral-angle tenderness. The femoral, popliteal and posterior tibial arteries could not be felt on either side. The right leg appeared somewhat duskier than the left, but the temperature seemed to be the same in each.

The temperature was 100.6°F., the pulse 120, and the respirations 22. The blood pressure was 110 systolic, 100 diastolic.

The patient was apprehensive, lethargic and occasionally incoherent. He complained of pain on both sides of the lumbar spine. Ten hours after admission the skin showed mottled cyanosis from the waist down, and the legs were colder than the arms. He became unresponsive, and died fourteen hours after admission.

DR. LOUIS G. JEKEL:

Our patient, a 53 year old man, suffered from chronic heart failure, and died having heart failure associated with a vascular occlusion in the lower abdomen, pelvis, and lower extremities. It seems we must decide, first, what kind of heart disease the patient had, and second, whether the vascular occlusion was arterial or venous.

There is, in this case, a rather definite history of coronary occlusion ten years previously. Furthermore there is a history of occasional anginal pain and intermittent claudication. From this we may deduce the presence of atherosclerosis of some degree. Certainly, coronary sclerosis would be part of the process, and the heart failure was, at least in part, due to this factor. The left bundle-branch block fits in with this picture also. The systolic blood-pressure is not elevated, although the diastolic is at least at the upper limits of normal. So we have, then, a picture of arerio-sclerotic heart disease without marked hypertension, and without kidney involvement.

Although this patient gave no history of rheumatic fever, I believe rheumatic heart disease must be considered in the diagnosis. I say this especially because of the murmurs present. First, there is systolic murmur at the apex. Now, an apical systolic murmur may be due to mitral valve deformity. In such a case the murmur usually will be transmitted laterally, even around to the back of the angle of the scapula. In our case no mention is made of a transmitted murmur. The apical systolic murmur may also be present in the absence of mitral disease. In such a case the murmur is not transmitted latterally, and is due to an enlargement of the mitral ring secondary to dilatation of the chambers of the heart. In our patient the heart was greatly enlarged, due in part to dilatation, no doubt, and in part to hypertrophy.

Our patient also exhibited a diastolic murmur, at the apex, described as a "marked apical diastolic gallop." This sounds more like a rheumatic heart. Yet, the description of a "gallop", which is really a third sound, is not proof that we are here dealing with a murmur. Had a diastolic thrill been described the evidence would be more convincing.

The confusion in this case thus arises mainly from the presence of findings which may or may not be due to rheumatic heart disease: heart murmurs; and the presence of findings which may be due to rheumatic heart disease or ar-

teriosclerotic heart disease; heart failure and left bundle-branch block.

Two pieces of evidence against rheumatic heart disease are: (1) the lack of a "mitral configuration" on the roentgenogram, and (2) the equal intensities of the second sounds at the aortic and pulmonic areas.

Now, what about the vascular accident that finally killed this man? Was it an anerysm of the aorta or of the iliac artery? I do not think so, for the pain did not seem to be severe enough, or the shock to the patient intense enough. He seemed to weather the attack too well for several days. Also, the blood pressure was too low for a ruptured aneurysm.

The diagnosis of phlebothrombosis is very attractive to me. The patient had been bedfast; his circulation was slow (B.P. 110/100 — Pulse Pressure, 10), and he was a good candidate for thrombosis. Furthermore he had only a month before lived through an episode of what apparently was a pulmonary infarction, indicating a loosened thrombus from somewhere. However, the patient, in the end, did not die of a pulmonary infarction, and the vascular occlusion in the pelvis took on less of the picture of thrombosis and more of that of an embolus.

So, with some trepidation I accept the diagnosis of arterial embolism. Our patient, again, made a good candidate, for his chronic heart disease established a rich soil for the production of a valvular or mural thrombus. Since there is little evidence of bacterial endocarditis or valvulitis, the mural thrombus would seem to be more likely. Probably a moderate sized mass occluded the left iliac artery only partially at first, for the symptoms were not severe enough for complete or massive occlusion. Then, the patient fared rather well for several days, apparently getting some blood through to the left lower extremity. But in the meantime, it is to be supposed, the embolus had produced some thrombosis. The thrombus propogated, spreading across the bifurcation of the aorta to invlove the right iliac artery, producing a "saddle" distribution of the occlusion, with the resulting complete closing off of the blood supply to both lower extremeties.

DIAGNOSIS: Arteriosclerotic heart disease with coronary insufficiency and heart failure.

Iliac artery and aortic embolic and thrombotic occlusion.

DIFFERENTIAL DIAGNOSIS:

Dr. Francis G. Barnum, Jr., (Assistant in medicine, Massachusetts General Hospital.) This is the case of a fifty-three-year-old man who had heart disease and developed congestive failure; then a complication ensued that probably caused his death. There are two fundamental questions to be answered: What type of heart disease did he have, and what was the nature of the final episode?

Atherosclerosis of the coronary vessels is the most probable cause of this patient's heart disease for a number of reasons. In the first place, he had an episode of severe chest pain ten years before admission, which kept him in bed for ten weeks and which was called a "coronary"; presumably, this was a myocardial infarction. Secondly, he subsequently had occasional episodes of precordial pain related to exertion; angina often makes its first appearance after myocardial infarction. Thirdly, he had occasional cramps in the left leg after exertion, suggesting that the atherosclerosis was not limited to the coronary vessels. Fourthly, his father had died of heart disease at the age of forty; this is not conclusive, of course, but in patients with angina pectoris one often uses as a prognostic yardstick the age of death of the parents, if they had coronary-artery disease. Fifthly, the only murmur heard on examination was an apical systolic murmur; this, as the only murmur in the presence of a heart as large as this, was undoubtedly due to cardiac dilatation with relative mitral insufficiency. It is logical that this dilatation was due to weakening of the myocardium from coronary atherosclerosis and the previous myocardial infarction. Sixthly, an electrocardiogram showed left-bundle-branch block, which is most often due to coronary artery disease. Finally, an apical diastolic gallop is common in dilatation of the left ventricle as well as in left-bundle-branch block.

Other causes of heart disease can be fairly readily excluded. Rheumatic heart disease with mitral insufficiency alone can be excluded on the basis of the absence of history of rheumatic fever and the fact that mitral insufficiency alone would not have produced this degree of cardiac enlargement. Syphilitic heart disease can be excluded by the negative Hinton test and the absence of an aortic murmur. There was nothing to support the diagnosis of myxedema or of beriberi heart disease. Congenital heart

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Some impulses reach the eye muscles and cause nystagmus; some reach the cerebellum and skeletal muscles and righting of the head results; others activate the emetic center to result in nausea, while still others reach the cerebrum making the person aware of his disturbed equilibrium. *Vertigo may be caused by a disease or abnormal stimuli of any of these tissues involved in the transmission of the vertigo impulse, including the cerebellum and the end organs.*

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Repeated clinical studies have established Dramamine as valuable in the control of the symptoms of Ménière's syndrome, the nausea and vomiting of pregnancy, radiation sickness, hypertension vertigo, the vertigo of fenestration procedures, labyrinthitis and vestibular dysfunction associated with antibiotic therapy, as well as in motion sickness.

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The site of Dramamine's action is probably in the labyrinthine structure.

*Swartout, R., III, and Gunther, K.: "Dizziness:" Vertigo and Syncope, GP *8*:35 (Nov.) 1953.

disease can be excluded by the location and intensity of the murmur, for the only form of congenital heart disease that produces an apical systolic murmur near the apex — namely, ventricular septal defect — would produce a loud murmur and thrill; also the murmur in this condition is usually maximal at the fourth left interspace next to the sternum, not at the apex.

Among the rarer causes of heart disease one might consider cardiac amyloidosis; however, there was nothing in the history or physical examination to suggest this diagnosis. The same statement can be made of the collagen diseases. Mycardial sarcoidosis is another possibility, but there were no cutaneous lesions or lymphadenopathy and the globulin was normal.

We have, then, this man with arteriosclerotic heart disease who probably had a myocardial infarction at the age of forty-three and who began to have exertional dyspnea three years before his first admission. Digitalis was given, with some improvement, as might have been expected. The fact that it was stopped and he grew worse confirms the impression that his heart was failing. The anorexia and loss of energy are consistent with beginning congestive heart failure. Nothing is said about the character of the epigastric pain so I must assume that it was due to poor functioning of the gastrointestinal tract caused by edema.

Three weeks before admission the gradual myocardial failure became more acute, with orthopnea, ankle edema and a depression in the urinary output; the last was probably due to the accumulation of edema fluid in the tissues that would normally be excreted in the urine. An outside possibility that the gnawing epigastric pain had been treated with Banthine and that this had caused a depression in the urinary output is unlikely since he had no true urinary symptoms — that is, no true retention.

On examination, the distention of the neck veins, the enlarged liver and the sacral and ankle edema show that the right side of the heart was failing, and the dyspnea and basal rales along with the accentuation of the vascular markings in the lungs show that the left ventricle was also failing. The chemical studies were consistent with congestive heart failure, all values being normal except for a low sodium and chloride. The moderate elevation of the white-cell count is also consistent, but I cannot explain the low percentage of neutrophils. The electrocardiogram showed left-bundle-branch block; the upright T waves in Lead I are unusual in left-bundle-branch block and suggest the possibility of a previous myocardial infarction.

On the fourth hospital day the patient felt a dull aching pain in the right upper anterior part of the chest and coughed up dark-red blood. This is perfectly typical of one of the common complications of heart failure—namely, pulmonary embolism. Several hours later a severe precordial pain, with a pleural friction rub 5 cm. below the left nipple, developed. This may have been due to another pulmonary embolus, through it is most unusual for a friction rub to develop so rapidly. The fact that the pain was accentuated by respiration, however, is in favor of a pulmonary embolus.

May I see the x-ray films?

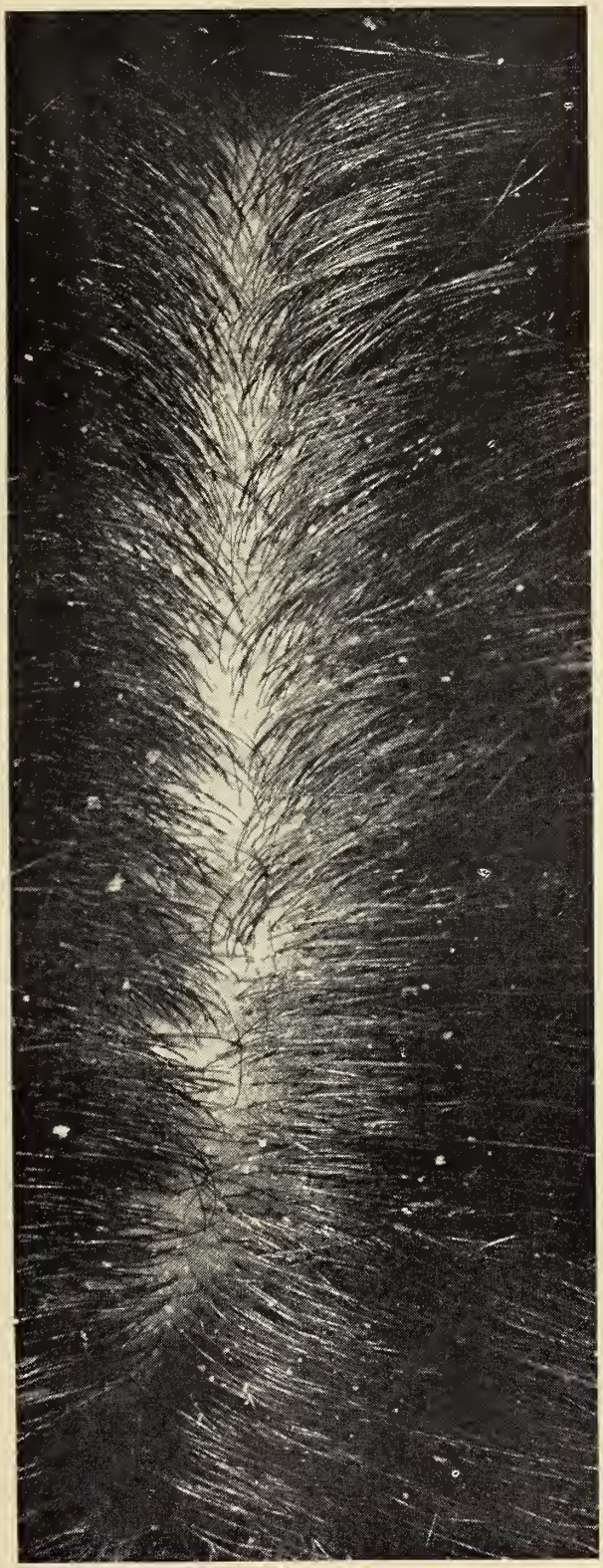
Dr. Stanley M. Wyman: These two sets of films of the chest, taken three days apart, both show considerable cardiac enlargement, which probably involves both left and right ventricles primarily. The aorta is calcified and somewhat tortuous. The enlargement of the hilar and pulmonary vascular shadows is fairly marked and is seen on both examinations. In addition, an the second examination, there is a hazy density in the left-lung field overlying the heart border.

Dr. Barnum: Is there any evidence of beginning dissection of the aorta, such as a wide supracardiac shadow?

Dr. Wyman: No. The aorta is well seen through the heart on both posteroanterior films and is fairly well seen in its upper portion on the lateral films.

Dr. Barnum: I, thus, have confirmation of the embolus to the left-lung field. The most likely source for this embolus is the leg veins. A cardiac source is probably excluded by the absence of auricular fibrillation and of bacterial endocarditis (since rheumatic heart disease and congenital heart disese have been ruled out). Embolus from a mural thrombus in the right ventricle is an outside possibility.

The patient entered the hospital for a second time because of a three day history of pain and tenderness in the left lower quadrant of the abdomen. That this pain was due to involvement of the kidney is strongly suggested by the radiation to the left flank and testicle and by the fact that urinalysis showed 15 to 20 red



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cells per highpower field in the sediment. The absence of costovertebral-angle tenderness does not exclude renal involvement.

Could this have been intraperitoneal disease involving the kidney? Pain in the abdomen on motion and with change in position suggests irritation of the parietal peritoneum; however, the fact that the abdomen was not tender makes this unlikely. It is possible that this path was partly due to occlusion of the superior mesenteric vessels. With the findings given, however, there is not sufficient evidence to make this diagnosis.

The decrease in urinary output was probably caused by a further accumulation of edema. The combination of clear lungs and distended neck veins may have been due to a large component of right-sided heart failure; it may be that the patient was in severe pain and held himself rigidly, thus increasing his intrathoracic pressure and causing distended neck veins; or, finally, pumonary edema may have been present without audible rales. The blood pressure showed a narrow pulse pressure with a high diastolic pressure, the latter probably due to the excitement and pain of his illness. Dr. Fennell has been kind enough to give me all the blood-pressure values in the two admissions: these were uniformly in the normal range.

The final accident was characterized by lethargy, pain on both sides of the lumbar spine, cyanosis from the waist down and decreased temperature of the legs. This must have been due to a vascular accident involving the lower limbs. The suddenness of onset, with absent pulsations in the leg arteries, is strongly suggestive of an arterial occlusion. Localized thrombosis does not fit the clinical picture, and there is nothing to suggest it; I am therefore left with the possibility of dissecting aneurysm or of multiple emboli.

This patient's pain was consistent with dissecting aneurysm since it waxed and waned and was extremely severe when it was present. The episodes of precordial pain with radiation to the left shoulder may have represented further dissection. The lethargy and incoherence are mental symptoms that can be association with dissecting aneurysm, presumably because of partial obstruction of the carotid arteries. Pain on both sides of the lumbar spine may have been due to dissection near the aortic bifurcation.

The main argument against dissecting aneurysm is the absence of hypertension both by history and on examination. Additional points against the diagnosis are absence of sudden pain in the chest and back, absence of a basal diastolic murmur and of a characteristic x-ray picture. In the series of cases of dissecting aneurysm of the aorta reported from the Massachusetts General Hospital evidence of hypertension was found in all. In addition, a typical history with a basal diastolic murmur was found in a significant percentage.

In favor of embolism is the fact that the patient had coronary-artery disease with a probable myocardial infarction ten years before his first admission. It is possible that he had a mural thrombus at that time and that, when congestive failure occurred, more thrombus developed and became a source for emboli. On the other hand he may have had a silent myocardial infarction sometime after the first admission. It is also possible that any one of the attacks of pain in the chest after discharge represented a myocardial infarct. Electrocardiographic proof of these could not be obtained in the presence of left-bundle-branch block.

The symptoms during the final admission could have been due to embolus to the left renal artery arising in a mural thrombus in the left ventricle, followed by a large saddle embolus or two smaller emboli occluding the iliac arteries. Other possible sources for emboli are a fibrillating auricle and bacterial growths superimposed on a defect of the ventricular septum or rheumatic heart disease. These have already been excluded. Paradoxical embolization via an unsuspected defect of the auricular septum seems far-fetched, as does a source in one of the pulmonary infarcts.

My diagnosis, therefore, is arteriosclerotic heart disease with myocardial infarction, old, and probably recent, with a mural thrombus and emboli to the left renal and to both iliac arteries; the last may have been a saddle embolus. There is a possibility of embolization to the superior mesenteric artery. There were also at least two pulmonary emboli.

CLINICAL DIAGNOSIS

Coronary-artery disease.

Saddle embolus of aorta, with thrombosis of renal arterics.

Dr. Barnum's Diagnoses

Arteriosclerotic heart disease.

Myocardial infarction, old and recent with mural thrombi.

Emboli to renal and both iliac arteries.

Pulmonary emboli.

Anatomical Diagnoses

Thrombosis of abdominal aorta, with occlusion of renal and iliac arteries.

Renal infarction, left.

Coronary-artery and probably hypertensive heart diesase.

Myocardial fibrosis and old infarction.

PATHOLOGICAL DISCUSSION

Dr. Robert H. Fennel, Jr.: The aorta was occluded by a thrombus from the bifurcation to just above the level of the renal arteries. The aorta was dilated above the bifurcation, and in that region the thrombus was yellow and firmly adherent, and appeared older than the thrombus that extended to occlude the renal arteries. Elsewhere in the abdominal aorta there was severe arteriosclerosis. The left kidney was infarcted, but the right was only congested. The heart was huge, weighing 750 gm. There was a scarred area in the posterior part of the interventricular septum. Elsewhere there was patchy fibrosis. The right coronary artery contained an old thrombus, but all branches were severely narrowed and sclerotic. Although it is well known that cardiac hypertrophy may occur in coronary-artery disease, I believe there must have been some other factor to account for the degree of hypertrophy by a heart weighing 750 gm. The diastolic pressure of 100 in the presence of cardiac failure indicates that this patient had probably had hypertension in the past. The lungs were emphysematous and slightly edematous.

The appearance of the thrombus in the aorta suggests that it arose there and extended retrogradely to occlude the renal arteries, the left earlier and the right later or terminally. There was no source for an embolus in the heart, although one cannot rule out the possibility of a mural thrombus in the left ventricle years previously, with subsequent embolization and superimposed thrombosis of the abdominal aorta.

A TUBERCULOSIS SYMPOSIUM

A TOTAL of thirty-five doctors from twelve States, Canada, and Bermuda attended the third annual Symposium for General Practitioners on Tuberculosis and Other Chronic Diseases held in Saranac Lake, July 12 through 16. This is the largest number of doctors ever to attend this Symposium.

It was sponsored by the American Trudeau Society as well as local medical societies. Classes were held in various hospitals, sanatoria, and research facilities in the Saranac Lake area including Trudeau-Saranac Institute, Ray Brook State Tuberculosis Hospital, the Veterans Administration Hospital at Sunmount, the Saranac Lake General Hospital, Saranac Lake Rehabilitation Guild, Stony Wold Sanatorium, and Sanatorium Gabriels. The faculty was composed of physicians, surgeons, and scientists from these institutions as well as those in private practice in Saranac Lake and nearby communities.

This Symposium is approved by the American Academy of General Practice for twenty-six hours of formal credit for its members and is designed to cover all important aspects of chronic pulmonary diseases from the general practitioner's point of view. In addition to lectures and panel discussions, there were many demonstrations in fluoroscopy, x-ray techniques, bactoriology, pathology, and physiology. The family doctors also had an opportunity to make patient rounds at many of the sanatoria located in this area.

It is anticipated that this Symposium will be held for the fourth time next year.

AMERICAN COLLEGE OF CHEST PHYSICIANS

The American College of Chest Physicians registered 1150 physicians and guests at its 20th Annual Meeting held in San Francisco, California, June 17-20, 195. This was the largest registration of any of the previous College meetings held on the west coast.

The following officers were elected for the year 1954-1955:

President, William A. Hudson, Detroit, Michigan; President-Elect, James H. Stygall, Indianapolis, Indiana; First Vice-President, Herman J. Moersch, Rochester, Minnesota; Second Vice-President, Burgess L. Gordon, Philadelphia, Pennsylvania; Treasurer, Charles K. Petter, Waukegan, Illinois; Assistant Treasurer, Albert H. Andrews, Jr., Chicago, Illinois; Chairm, Board of Regents, Donald R. McKay, Buffalo, New York; Historian, Carl C. Aven, Atlanta, Georgia.

Dr. Howell Randolph of Phoenix is Governor of the College for the state of Arizona.

The 21st Annual Meeting of the College will be held in Atlantic City, New Jersey, June 2-5, 1955.

Interesting Topics

RECOMMENDED READING IN CURRENT MEDICAL JOURNALS

BRONCHOGENIC CARCINOMA, a Diagnostic Problem. Stander and Cacioppo, The Journ. of the La. State Med. Soc., April, 1954. A short article emphasizing things which are fairly generally known, and citing 14 cases. Early diagnosis is necessary. Every male patient past the age of 40, and especially the heavy cigarette smoker, should have an x-ray examination of the chest every six months. Every patient with unexplained pulmonary lesion is a subject for consideration of exploratory thoracotomy.

ROENTGENOLOGIC EXAMINATION IN OBSTETRIC CASES. George D. Davis, M.D., Mayo Clinic, Rochester, in Journal-Lancet, of June, 1954. This procedure is becoming increasingly useful in obstetrics. The more important indications for roentgenologic examination are discussed, including diagnosis of pregnancy, determination of stage of gestation, prenatal abnormalities (of which there are quite a number mentioned), complications of labor, and pelvimetry. He discussed the fallacious idea that x-ray examinations by qualified radiologists would be injurious to the fetus. It is not.

MANAGEMENT OF BURNS. Reece R. Boone, Jr., M.D., in West Va. Med. Journ., June, 1954 The management of burns is a problem that presents itself almost daily to the general practitioner. Great strides have been made in burn therapy in recent years and the treatment of burns is becoming simpler and more standardized. Points discussed are classification of burns, evaluation of prognosis, shock vs. burn, plasma and fluid needs, mineral balance, Curling's ulcer, treatment of the burn itself, and grafting.

PROSTATIC CANCER, Diagnosis and Treatment. W. W. Scott, M.D., Johns Hopkins Univ., in The Journ. of the Med. Assn. of Alabama, April, 1954. Prostatic cancer is symptomless in its curable stage, so that the initial diagnosis rests with the general practitioner. The index finger of the doctor is still the most important diagnostic means of diagnosing this condition. Any hard area in the prostate calls for urologic consultation. Periodic rectal examination of every male over 50 years offers the only possibility of finding more cases of operable prostatic cancer.

RHEUMATOID ARTHRITIS. Comparison of aspirin and cortisone in treatment of early cases. Report of the Joint Committee of the Medical Research Council (England) and Nuffield Foundation. British Med. Journ., May 29, 1954. For practical purposes, there seems to be surprisingly little to choose between cortisone and aspirin in the management of 61 cases in the early stages of rheumatoid arthritis.

BIOPSIES. Another report in the series on Clinical Pathology in General Practice, by Raymond Whitehead, M.D., D. Sc., Reader in Pathology, University of Manchester (Eng.), British Med. Journ., May 29, 1954.

A very practical discussion on the value of biopsies, method of taking and preserving them and the data needed by the pathologist, on cytodiagnosis, grading of tumors and biopsy reports. Some very valuable points for those who take biopsies in their offices.

"MYIASIS" in Nasal antrum. From use of aspirator in collecting small insects. Reported by Paul D. Hurd, Jr., of the Univ. of Calif., in Science, June 4, 1954. Although aspiration was through a water bottle, infection occurred with hatching of several types of insects in the maxillary antrum.

PHENYLBUTAZONE (Butazolidin). Another series of reports on the use of this drug appear in British Med. Journ. for April 3, 1954. One article on uric acid metabolism after its use, one on the Stevens-Johnson syndrome (pyrexia and dermatitis), and two reports of deaths.

SEROLOGICAL TESTS IN DIAGNOSIS. Another articles on the series on Clinical Pathology in General Practice. E.T.C. Spooner, of the London School of Hygiene and Tropical Medicine, presents this discussion in British Med. Journ., April 3, 1954. He says "In this country (England) serologic tests aid diagnosis in enteric fever, brucellosis, leptospirosis, infective mononucleosis, pneumonia, influenza, mumps, psittacosis, virus infections, Q fever and toxoplasmosis.

ELECTROCARDIOGRAPHY. For those interested, a symposium of seven articles on this subject appears in the May, 1954 issue of Diseases of the Chest.

RHEUMATOID ARTHRITIS AND CORTISONE. In the British Medical Journal of May 15, 1954, a group of observers reporting from the Rheumatism Department of the West London Hospital, give results on treatment of 20 patients, with cortisone, the drug administration extending over a period of two years. They consider this therapy a practical addition in selected cases. It is not curative and they have observed radiologic evidence of progression of joint damage even when symptoms were relieved. Contraindications to this therapy include active tuberculosis, present or past psychoneurosis, diabetes, hypertension, severe osteoporosis and in long standing cases much irreversible joint damage. Seventeen of the twenty cases, though previously incapacitated, were able to return to their occupations, with varying degrees of improvement.

Editorial

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The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.
2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. (See MEDICAL WRITING by Morris Fishbein.)
3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.
4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.
5. Submit manuscript typewritten and double-spaced.
6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.

The Editor is always ready, willing, and happy to help in any way possible.

INDUSTRIAL MEDICINE

INDUSTRIAL Medicine will undoubtedly develop as industry expands and the population of our state increases. In many cases the employer, in the interest of constant and dependable medical care of the employee, will seek out and enlist the service of a doctor or clinic. Or, efforts may be made by the doctor or clinic to be listed as Company Physicians. This establishment of liaison between company and physician can definitely prove of benefit to the patient by having available immediate and constant medical coverage. This procedure loses its purpose and becomes undesirable when the patient is forced to accept one medical doctor against his desire, particularly when his own physician is available. The patient must be permitted his choice of physician. By his selection of physician there is added respect for the doctor, treatment will be more satisfactorily followed and, with cooperation, it is likely that the patient can be returned to full duty at an earlier date; a shorter illness for the patient and less expense to the employer and Industrial Commission. By Industrial Commission regulation the employer can ask to have a patient checked and so prevent malingering and "goldbricking". The patient in turn desires to receive treatment by the physician of his choice. Forcing a physician upon a patient will destroy good rapport, increase suspicion that he may be returned to work before it is advisable, and approaches a limited form of socialized medicine. We are adverse to "SOCIALIZED MEDICINE" on a national scale; how can we condone it in a limited form? The patient must be given his choice of physician. The medical profession recognizes that this choice must exist. It seems desirable that the Industrial Commission should so inform employers and employees.

D.W.N.

A REMINDER ABOUT SOCIAL SECURITY

Social Security reports are more expensive for the government to handle if they do not show account numbers for employees. These reports are also more expensive to handle if they show incorrect numbers, or if a name reported is different than that shown on the social security card. Help keep down government expense by reporting social security numbers for all of your employees, and by reporting their names and numbers exactly as they appear on their social security cards.

MEETING NOTICE

Nineteenth Annual Meeting
Mississippi Valley Medical Society
New Hotel Sherman
Chicago, Ill., Sept. 22, 23, 24, 1954

Also Meeting at Same Time and Place 11th Annual Meeting
American Medical Writers' Assn., Sept. 24

TOPICS OF *Current Medical* INTEREST

RX., DX., AND DRS.

By Guillermo Osler, M.D.

A physician's estimate of the POLIOMYELITIS situation depends mostly on his contacts in practice and what he reads in medical journals and newspapers. His interest can, however, be made more intense by family or personal involvement. . . . An analysis of the various aspects of polio shows glaring gaps in our knowledge of the disease which make strong men tremble and the ignorant flee. . . . The virus is known, but can't be demonstrated in the ordinary lab. There is no test for the disease, and tests of effect (spinal tap, etc.) are irregularly helpful. There is no precise knowledge of transmission, no certain information on the hazards of contact or the period of communicability. There is no specific treatment and no (as yet) proved means of prophylaxis. . . . It can safely be said, brother, that we have some work to do.

The Michigan State Medical Society must have been pleased with this year's PROGRAM. It is interesting, and for several reasons. . . . They had 27 speakers, including such famous medical names as Capps, O'Leary, Smillie, and Snapper. . . . They had a guest from Arizona (W. P. Holbrook of Tucson) . . . They also had three justly and personally famous sons of famous medical fathers, C. W. Mayo, George Crile, Jr., and C. A. Janeway.

It is surprising to find a person for whom A SEDATIVE IS NOT A SEDATIVE. Some people do not react 'normally' to barbiturates, and the reaction may be to a specific preparation. . . . Others may develop a chronic barbiturate intoxication, with speech disturbances, tremors, ataxia, decreased reflexes, drowsiness, disorientation, delusions and even euphoria and excitement. . . . Such signs and symptoms may be the tip-off to an underlying condition, since patients with kidney disease, liver damage, hyperthyroidism, severe anemias, diabetes, and cerebral arteriosclerosis do not tolerate barbiturates well.

Three St. Louis surgeons (Heifitz, Richards, and Lawrence) have reported in the 'Archives of Surgery' that WOUND-HEALING after surgery (in the absence of drains) heals just as well WITHOUT DRESSINGS as with dressings, for 24 hours or for the customary several days. . . . In addition there is a saving of dressings, greater comfort, no adhesive tape reactions, and an ease of observation (but the surgical-supply companies won't like it) . . . This undressing of wounds comes at a time when tapes are becoming more versatile, tape-removing fluids are available, and even spray-on dressings have been invented. They all still have a place, however.

TREATMENT No. 128 FOR TRICHOMONAS VAGINALIS VAGINITIS. E. G. M. Krieg of Detroit briefly summarizes his work as follows: "Trichomonas has been associated with a LOWERED BASAL METABILIC rate in all our cases. All have responded to adequate amounts of thyroid extract. Further differential investigation is indicated."

The General Electric 'X-Ray News' recently contained a brief 'brief' for SECTIONAL RADIOGRAPHY by Dr. Irving Kane of New York. (It just so happens that Dr. Kane has written a book on the subject, but this coincidence is not only good for Dr. Kane, but for G. E. and the public). . . . He calls the method "bloodless dissection", and believes that no one with a pulmonary lesion can be completely diagnosed, and no lesion can be expectantly treated, and no physician's reputation is entirely safe if sectional films are not freely taken. . . . He describes the process by which a selected plane is clearly recorded as being due to shadows cast by normal and abnormal structures when a "reciprocal motion of the x-ray tube and film takes place throughout the period of x-ray exposure".

The new attitude towards the PATIENT AND HIS BLOOD PRESSURE ain't what it used to be. It is now suggested that the patient not only must know the levels, but may have to have daily pressures taken at home. . . . It has been demonstrated (by Freis of Georgetown, in the Medical Annals of D.C.) that blood pressures taken in the office, after discharge from the hospital, are notably higher than when taken at home in two-thirds of the patients. . . . This makes the prescription of ganglionic-blocking drugs quite difficult, and makes home pressures not only legitimate but necessary. (The particular drug used by Freis was pentapyrolidinium.)

DR. PHILIP HENCH is noted to have given a paper before a regional meeting of the A.C.P. on "The Cortisones and Corticotropins in Rheumatoid Arthritis". . . . What he has to say must be constantly interesting to any audience, but when he gets asked to speak he must sometimes say, "How many times, O Lord?!"

Strickler and colleagues of Minneapolis report

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on the use of GALL-STONE SOLVENTS in 'Minnesota Medicine'. (This is not to be confused with the apparently futile attempts to dissolve stones in the urinary tract). . . . They say that 16 to 25% of operations for choledocholithiasis are followed by retained stones. They describe a routine for flushing the ducts, including use of a topical anaesthetic and the use of ether as the best solvent. Lay persons may be allowed to do the procedure, since it must often be done daily for months. . . . Results in the Minneapolis area have been good, and Pibram and others have a high rate of success. . . . Nice to know for the rare cases which occur.

'Medical Economics' (a journal which likes pictures of our editors) is not afraid to criticize SACRED COWS if it seems indicated. . . . They recently have commented on a report which 'The Commission on Financing of Hospital Care' has made after a two-year study. The suggestions do seem rather general, and the grant was for $500,000. . . . Med. Ec. calls it "a fine example of an elephant giving birth to a mouse", and that it is (as our English cousins would say) "a crashing bore."

Individual reports continue to be heard about the favorable effects of the Rauwolfia serpentina group of drugs, and in 6 to 12 months there should be several large series in print. . . . The indications and results of CHLORPROMAZINE should also be better known. It is another interesting and versatile drug; the prevention of nausea and the management of disturbed psychiatric patients have previously been reported. . . . Albert and four colleagues of Washington have now reported its use in 64 alcoholics. Twenty-one had D.T.'s and the remainder a psychomotor agitation. . . . The drug was given intravenously, intramuscularly, and orally. The IV dose is hardest to give in a restless patient, has the quickest action (in 15 minutes, during the infusion), and has the greatest side effects (tachycardia and hypotension). The authors consider that IM and oral use make IV administration unnecessary. . . . IM chlorpromazine is effective in about an hour, and relaxation and sleep occur without hypotension. The effects last 6 to 8 hours, and can then be repeated. IV fluids may be given after relaxation occurs Oral dosage is quite useful, with effects in 60 to 75 minutes, and it can be used following initial IV or IM doses. . . . The duration of the excitatory stage is not shortened by the drug. It did not produce intense CNS depression. The occasional convulsions of acute alcoholism did not occur in their series. The hypotension was a problem only when the patients were allowed to rise from the horizontal. . . . The patient reaction is almost too good, since they are said to waken without the jitters which follow use of paraldehyde. The mode of action is not certain, but it may be hypothalmic, with a blocking effect on the diencephalon. The dosage by all routes is 100 to 200 mg.

Don't have your chest x-rayed, Doctor, unless you want to, 1. Be reassured about your normalcy; 2. Find an occasional small lesion of the heart or lungs which can be easily handled; and/or, 3. Be a very fine example to your patients and the public. (Adv't.)

A British STUDY OF TELEPHONES has confirmed a general feeling that the risk of respiratory infection from ordinary use is remote. . . . No pathogens except staph and pneumococci were found. More positive swab cultures were found on earpieces (17%) than mouthpieces (7%). . . . No tubercle bacilli were found in the small series (150 examinations). (We'd like to know of a larger series of sanatorium 'phones, just to be sure of the potential of instruments more possibly contaminated). . . . Disinfection made little difference in the culture results.

BRIEF REMINDER: There are more persons under treatment for tuberculosis now than ever before. . . . The cause is due to better case-finding methods (and better usage), and the preservative effects of new treatment which keep people alive and/or well.

Another comment about TB case-finding (and another note from 'Minnesota Medicine') concerns the use of ROUTINE X-RAYS OF ALL ADMISSIONS TO GENERAL HOSPITALS. . . . Dr. Medelman of Minn., and Dr. Anderson of the U.S.P.H.S. each has a plea for greater use of the method in Minnesota. Even in that enlightened state (where Dr. J. A. Myers claims the disease is under control) they find 2,000 'new' cases per year. It is a good diagnostic method; a good investment; a good public health measure; and a neglected procedure. Forty hospitals use it, but only 'to some extent', and only forty of the several hundred in the state. . . . We can (and have) attacked the incomplete usage of routine x-raying in Wisconsin, California, Minnesota, and the United States in general. Arizona can feel a certain pride that it is not being omitted; the usage here is just as occasional as most places and, according to the mortality rate, far more necessary. All the hospitals have to do is "get a-moverin' ".

Have you heard physicians (even chest specialists) say to patients "Don't have a sputum examination during a 'cold'. It might be positive", and if so, what do you think of it? . . . We say "Pew!" If a person has a positive sputum (or gastric) it means active disease. Active disease should be diagnosed whenever possible. If you miss a chance, who gets fooled? . . . The tubercle bacillus never says "King's X", or "we won't hurt anybody if he has his fingers crossed".

Another note on pulmonary difficulties concerns 'FARMER'S LUNG', a name for broncho-

pulmonary moniliasis. . . . Once considered to be improbable, or possibly a secondary infection, it now seems that it can be primary under some conditions. .One of these conditions is exposure to a dusty farm milieu, especially to moldy silage. . . . Soucheray reports a series of cases from the Midwest in which exposure to ensilage resulted in chronic bronchial symptoms, dyspnea and cyanosis, patchy (and other) lung lesions, and acute symptoms to recurrent exposures. Bacterial diagnosis is difficult in both acute and chronic infection. . . . The term 'Farmer's Lung' came from publications in England and the Scandanavian countries. The extent of the lesions depends somewhat on the continuance of exposure, from bronchitis to pneumonitis to fibrotic and even cavitative types. It is still not certain whether the monilia is a primary invader, but exposure in animals suggests that it may be.

OSTEOPATHS APPROVE ON-CAMPUS VISITS

(*AMA Secretary's Letter No.* 294 — *August* 4, 1954)

THE House of Delegates of the American Osteopathic Association, meeting in Toronto last July 15, approved on-campus visits of its schools by an A.M.A. Committee to determine the quality of medical education provided.

This step dates back to the A.M.A. House of Delegates session in 1952 when a Committee for the Study of Relations Between Osteopathy and Medicine, headed by A.M.A. Past-President John W. Cline, was created. As many doctors know, the Committee did a great deal of work since it was organized.

At the A.M.A. June meeting in San Francisco this year, the Committee submitted "a progress report" to the Board of Trustees, which was later adopted by the House of Delegates.

The Committee's three-page typewritten report said that "the justification or lack of justification of the 'cultist' appellation of modern osteopathic education could be settled with finality and to the satisfaction of most fair-minded individuals by direct on-campus observation and study of osteopathic schools. The Committee, therefore, proposed to the Conference Committee of the American Osteopathic Association that it obtain permission for the Committee for the Study of Relations Between Osteopathy and Medicine to visit schools of osteopathy for this purpose."

Two important paragraphs of the A.M.A.'s Committee report said:

"It was agreed that each school would be visited by two members of the Committee, accompanied by an individual of established experience in inspection of medical schools. The studies would be of sufficient duration, breadth and depth to establish the nature and scope of the educational program and determine the quality of medical education provided.

"The Conference Committee favorably recommended this proposal to the Board of Trustees of the American Osteopathic Association which considered it at a special meeting on February 6-7, 1954. It has referred the question to the House of Delegates which will act upon the proposal at its Toronto meeting in July. If the action of the House of Delegates of the American Osteopathic Association be favorable, the on-campus observations can be carried out in the fall of this year."

The action of the House of Delegates of the American Osteopathic Association was favorable. The Association issued a statement last week setting forth the action of its delegates. It is rather lengthy, but since it is so important to our study so far I quote it herewith in full:

"The House of Delegates of the American Osteopathic Association in session in Toronto July 15, 1954, directed the Conference Committee to continue in its deliberations with the committee for the Study of Relations Between Osteopathy and Medicine of the American Medical Association.

"In expressing its confidence in the four years work of the A.O.A. Conference Committee, the House agreed that the Committee should have the authority to negotiate with the A.M.A. Committee on possible visitation by the latter of osteopathic colleges. The purpose of this visitation would be to observe the nature and scope of their education programs. This observational opportunity would be conducted entirely within limits agreed upon by the two committees. The immediate purpose of such on-campus visitations is to provide information to the A.M.A. Committee to assist in its efforts to remove the cultist designation from the osteopathic profession.

"The House of Delegates of the A.O.A. in its approval of such visitations has established no new precedent, except that the proposed visitations would permit a private agency to determine for itself osteopathic educational programs and procedures. A much wider permission has long been afforded to official state

examining agencies, granting agencies of the U. S. Department of Health, Education and Welfare, and other official groups to visit osteopathic schools. If the A.O.A. Conference Committee permits observation of osteopathic colleges by a private agency — it does so on the basis the American Osteopathic Association has long indicated its willingness to cooperate with the authorized group of any profession 'whereever that cooperation may be expected to improve the health service offer the public.'

"Approval or accreditation of osteopathic colleges is entirely without the province of observational bodies and any visitations by the Committee on Relations Between Osteopathy and Medicine, if made, will be made purely for the purpose of affording a private agency an opportunity to inform itself about osteopathic educational programs.

"In commenting on this action, the newly elected President of the American Osteopathic Association, John W. Mulford, D. O., of Cincinnati, stated that the action was taken by the House of Delegates 'with the complete confidence that neither the osteopathic profession nor the medical profession wishes to inflict its officialdom on the other.' He went on to say that the action of the A.O.A. House of Delegates could be considered as 'a logical outgrowth of the mutual respect which the two schools of healing hold for each other.' "

WATCH "MEDIC" — Channel 12 KVAR-TV

MEDICINE IS the hero of an entirely new national television program. Medicine as you and I know it . . . medicine as you and I would like the American public to appreciate it.

The program is entitled MEDIC. The first program in this new weekly series will be on Monday night, September 13, 9:00 EST, over the NBC network. I am writing you because this program carries the official endorsement of the Los Angeles County Medical Association.

Our profession does not arrive at decisions hastily — in practice or in ethics. Our decision in this case has been carefully weighed and examined for two years; and many of us have lived and worked with this program, because it is a tradition-breaking forward step in medical public relations.

It was that long ago that James Moser, creator-writer of MEDIC, came to us with this idea; case histories of medicine presented with documentary truth; filmed under the technical supervision of a doctor appointed by us; demonstrating medicine's daily and historic contribution to living; pointing toward a better public understanding of the science and the art of medicine; and establishing a new rapport between patient and doctor.

Each case described in the MEDIC series tells the story of treatment of *a* patient by *a* doctor. Each script is approved by us; a physician is present on every set.

In addition to medical supervision and approval of scripts, we reserved the right of sponsor approval. Dow Chemical Company chose to sponsor MEDIC, and we doubt if one more acceptable could have been selected. We believe you will compliment Dow and NBC for their service to medicine and to the public.

I urge you to watch MEDIC. I urge you to tell your friends and patients about it. You will be proud of the manner in which is mirrors medicine's place in progress and your contribution to everyday living.

J. Philip Sampson, M.D.,

President, L.A. County Medical Society

AAPS ESSAY CONTEST FOR 1955

The ninth annual national essay contest for high school students sponsored by the Association of American Physicians and Surgeons has been announced. The subject is "The Advantages of Private Medical Care," and the prizes range from $1,000 for the first prize to $25 for the sixth prize. State and County Medical Societies are urged to cooperate in this contest. Further information can be obtained from your local membership of the AAPS or by addressing Dr. Mal Rumph, Chairman, AAPS Essay Contest Committee, Suite 318, 185 North Wabash Avenue, Chicago 1, Illinois.

Organization PAGE

CIVICS

Norman A. Ross, M.D., Phoenix, Arizona

UNITED CEREBRAL PALSY ASSOCIATION OF CENTRAL ARIZONA, INC., 103 NORTH CENTRAL AVENUE, PHOENIX, ARIZONA.

"Cerebral Palsy", a textbook, the author of which is Cyril B. Courville, M.D., is available without charge to members of the Arizona State Medical Association. It will be mailed either to your home or office. Please address your requests to the United Cerebral Palsy Association of Central Arizona, 718 Security Building, Phoenix, Arizona. This book is available after September 1, 1954.

The descriptive material furnished us by the United Cerebral Palsy Association is to the effect that there are the usual sections, history, etiology, pathology, with discussion of resultant clinical syndromes; and a complete section on treatment. Advice is to the effect that the book is profusely illustrated, adequately and properly indexed, and contains biography. The author, Cyril B. Courville, M.D., is Professor of Nervous Diseases at the College of Medical Evangelists, and Chairman of the Allied Services Committee Los Angeles County Chapter of United Cerebral Palsy.

This book is to be offered later to interested laymen, particularly lay educators. In that additional books are to follow and be distributed through our's and these other groups, we recommend ordering this book.

Considering the broad social activities of members of our auxiliary, we suggest this book for your home library.

* * *

ARIZONA SOCIETY FOR CRIPPLED CHILDREN AND ADULTS, INC.,
207 ARIZONA TITLE BUILDING, PHOENIX, ARIZONA
MOBILE DIAGNOSTIC CLINICS
And Follow-up Services

Location	Area.	Diagnostic Clinics (Division of Crippled Children Services)	Follow-up Physical and Speech Therapy Services (Easter Seal Society)
Ajo	Ajo	Sept. 5 (Sunday)	Sept. 6, 7 (Mon., Tues.)
Bisbee	Cochise Co.	Sept. 12 (Sunday)	Sept. 13 — Oct. 16
Nogales	Santa Cruz Co.	Oct. 24 (Sunday)	Oct. 25, 26
Coolidge	Pinal Co.	Oct. 31 (Sunday)	Nov. 1, 2
Flagstaff	Coconino Co.	Nov. 7 (Sunday)	Nov. 8, 9
Yuma	Yuma Co.	Nov. 14 (Sunday)	Nov. 15 — Dec. 17
Douglas	Cochise Co.		Jan. 9 — 12
Globe	Gila Co.	Jan. 16 (Sunday)	Jan. 17 — Feb. 18
Kingman	Mohave Co.	Feb. 27 (Sunday)	Feb. 28 — Mar. 1
Safford	Graham Co.	Mar. 13 (Sunday)	Mar. 14 — April 15
Clifton	Greenlee Co.	Apr. 3 (Sunday)	(both Safford, Clifton - Morenci)
Winslow	Navajo Co.	Apr. 24 (Sunday)	Apr. 25, 26
Prescott	Yavapai Co.	May 7 (Saturday)	May 8 — June 10
Safford	Graham Co.		June 14, 15
St. Johns	Apache Co.	June 19 (Sunday)	June 20, 21
Coolidge	Pinal Co.		June 23, 24, 25

The above diagnostic clinics will operate as before in all counties but they will be under the direction of the Crippled Children's Division of the State Department of Public Welfare.

The post-clinic followup will be the responsibility of the Arizona Society for Crippled Chil-

dren and Adults. Provision is being made for follow-up by speech and physical therapists. Intense follow-up will be done in five, five-week clinics which will be held in the following areas: Cochise, Yuma, Globe-Miami-Superior, Safford-Clifton-Morenci, and Yavapai. The United Cerebral Palsy Association of Arizona is to join in this program as are such service groups as the Kiwanis Foundation and Lions Clubs. It is hoped that other service groups will cooperate.

This cooperative plan is considered to be "the foundation for consolidation of efforts of both public and private agencies on behalf of the handicapped in order to give the best service possible with facilities, staff and funds available."

Advice is to the effect that this programming is at a state level, that public health units and the Polio Foundation are giving consideration to it.

It is to be noted that local agencies and organizations are returning their identity but will be asked and encouraged to participate in the state wide cooperative clinic program.

NATIONAL FOUNDATION FOR INFANTILE PARALYSIS, 120 Broadway, New York 5, New York, State Office 39 West Adams, Phoenix, Arizona.

Why transfer polio cases from Arizona?

Since 1951, the National Foundation has appropriated about $1,400,000 for assistance in the establishment of centers in which **local chapters help pay individual patient costs as needed.** The centers are part of a long-range program initiated by the National Foundation with the following primary objectives:

1. To free patients as much as possible from dependence upon tank respirators and to provide maximum rehabilitation;
2. To gain more knowledge about the problems with breathing difficulties in both acute and chronic polio patients and thus develop better methods of care;
3. To establish and maintain teaching programs for professional personnel in the care of polio patients with breathing difficulties;
4. To plan programs for the care of patients in home environments and to develop special teaching and consultative services for physicians in other hospitals caring both for acute and long-term patients.

The Answer:

The establishment of these centers followed a three year pilot study of respirator cases treated at Children's Hospital School in Baltimore. These studies disclosed that patients could make better progress when grouped together for care.

ARIZONA TUBERCULOSIS AND HEALTH ASSOCIATION, 111 East Willetta, Phoenix, Arizona.

This marks the third year that the National Tuberculosis Association in cooperation with the American Hospital Association and the Public Health Service are demonstrating the value of routine hospital admission screening x-ray programs at the annual meeting of the American Hospital Association in Chicago, September 11-17, 1954. A representative of the three organizations will be present to answer questions.

The Arizona State Tuberculosis Association through its special committee on chest x-ray is in the process of developing a joint activity with the Arizona Division, American Cancer Society and the Arizona Heart Association. This includes routine hospital admission x-ray programming as well as a broad program of chest x-ray.

MUSCULAR DYSTROPHY ASSOCIATION, INC., MARICOPA COUNTY CHAPTER, 4431 NORTH 7th AVE., PHOENIX, ARIZONA.

"The Letter Carriers' March for Muscular Dystrophy" in November of 1953 produced more than $3,500.00 for this agency. This money in the main will be used to foster research into all phases of this disease. A portion of these funds will go to organizing community and regional treatment facilities.

The growth of this organization is phenomenal. Its beginning was in 1950 in New York City and at that time included only a few parents. In a matter of months a national organization developed and in January of 1954, research grants totalling almost a million dollars were in effect.

It is pointed out in their circulars that in America today the general public is showing its willingness to assume the responsibility of an active partnership with men of science.

Representatives of this organization advise that American teamwork is most needed in our state. Arizona laymen and physicians alike are being requested to report all known or suspected cases. The national representative stated that the known cases here, a total of seventeen, is many times less than must exist in our state.

Muscular Dystrophy is primarily a research program but Arizona can receive little effect of this study if the dystrophy case is not found.

ARIZONA Pharmaceutical PAGE

THERAPEUTIC AIDS

By Joseph A. Zapotocky, Ph.D.

Pharmacy College, University of Arizona

MANY years hence our present era will probably be classified historically as the synthetic age. We have but to observe about us the vast scope and the versatility of modern synthetics. Even in medicine, the armamentarium at the physician's command is predominantly of synthetic or bio-synthetic origin. Very few natural products of plant or animal origin remain in use as compared to all those used a quarter or a half century ago. The synthetic medicinals of the past decade or two have evolved at such a tremendous rate, and many have been so spectacular, that a less glamorous group of synthetics has gone almost unnoticed except by a few. In this group of products are the numerous vehicles, solvents, emulsifiers, protectives, buffers, preservatives, and ointment, cream, lotion, and suppository bases usually classified as therapeutic and compounding aids. They possess no therapeutic action of their own, but they are necessary for the correct formulation of many old and new medicinals. The physician and pharmacist must have a working knowledge of these agents which increase absorption, slow deterioration, and enhance the effective use of many drugs. Many failures of medication may be attributed to a lack of knowledge of these new therapeutic aids. For example, a solution of a antibiotic in distilled water may be almost worthless whereas a solution of the same antibiotic in a properly buffered vehicle can be very effective; an age old petroleum base may be a poor choice as an ointment base if there is an improper release of the medicinal agent; and the proper use of preservatives may prevent reinfection with solutions which may be easily contaminated with bacteria or molds.

Two of the most versatile therapeutic aids are the cellulose derivatives, methylcellulose and sodium carboxymethylcellulose. Both are water soluble, non-ionic agents which act as excellent carrying agents for most medicinals. They occur in various viscosity types which, when properly handled, may serve as highly compatible ointment or lotion bases, emulsifiers, and suspending agents. Their solutions are very stable and, in certain concentrations, serve as excellent bases for ophthalmic and nasal preparations.

The polyethylene glycols or Carbowaxes are hydrophylic polymers which, depending on their molecular weight, vary in consistency from liquids to wax-like solids. They are bland, highly compatible products, which may be mixed in various proportions to serve as ointment, lotion, or suppository bases and as solvents or carriers for numerous medicinal agents.

The sorbitans (Spans) and their polyoxyethylene derivatives (Tweens) are non-ionic surface active agents which are effective as solubilizers and emulsifiers. They may form oil in water or water in oil bases of a lotion, ointment, or suppository consistency. They enhance the dispersibility and release of the medicinal agent incorporated with them.

Numerous other anionic, cationic, and non-ionic agents are available and have outmoded and outperformed the few available therapeutic aids of the past. The use of these and the use of buffers, preservatives, and protectives are almost as important for successfully combating disease with certain types of medication as the medication itself. Formulas containing such agents are frequently reported in medical literature. The pharmacist through his training and the scientific literature available to him is prepared to cope with the compounding problems involving these new therapeutic aids. The modern medicinal agent needs its counter-part — the modern therapeutic aid.

Woman's AUXILIARY

A LETTER FROM THE PRESIDENT



Mrs. Brick P. Storts

Dear Auxiliary Member:

I am very proud to represent you as president of the Woman's Auxiliary to the Arizona Medical Association. I am looking forward with much enthusiasm to my visits with you this fall and winter.

Each one of us, as an auxiliary member, can serve as a public relations agent in our community organizations. If we are to do this, we must keep informed concerning A.M.A. activities and current legislation. Read the letters and pamphlets sent to your husband from his A.M.A. and his Washington representative. Often we, as wives of doctors, must be the public relations agents for our busy doctor husbands. We must help him see the public viewpoint as we in turn strive to bring the doctors' views, aims, and problems to the public.

We must continue to grow in membership; increase our contributions to the American Medical Educational Foundation; foster nurse recruitment; give more loans for nurses' training; be informed on Civil Defense; support the sale of "Today's Health"; sponsor future nurses clubs; and continue to be cognizant of pending legislation concerning health and welfare. Foremost in our minds must always be the question, "What can I do that will be of most service to my community in the field of health?" One auxiliary member is often the only medical impression that some persons get; therefore it is most necessary that we are well informed and can clearly tell others of our aims. Our organization is only as strong as you individual members. Our accomplishments will be only as great as you desire to make them.

May I urge each one of you to extend and enlarge your contacts within the educational, civic, and religious groups of your community. Thus we will make the work and accomplishments of every doctor's wife in every field of endeavor pay dividends to the auxiliary and to the professional family.

Most sincerely,
Gladys Storts (Mrs. B.P.)

ANNOUNCEMENT OF THE VAN METER PRIZE AWARD

The American Goiter Association again offers the Van Meter Prize Award of Three Hundred Dollars and two honorable mentions for the best essays submitted concerning original work on problems related to the thyroid gland. The award will be made at the annual meeting of the Association which will be held in Oklahoma City, Oklahoma, April 28, 29 and 30, 1955, providing essays of sufficient merit are presented in competition.

The competing essays may cover either clinical or research investigations; should not exceed three thousand words in length; must be presented in English, and a typewritten double space copy in duplicate sent to the Secretary, John C. McClintock, M.D., 149½ Washington Avenue, Albany, New York, not later than January 15, 1955. The committee, who will review the manuscripts, is composed of men well qualified to judge the merits of the competing essays.

A place will be reserved on the program of the annual meeting for the presentation of the Prize Award Essay by the author, if it is possible for him to attend. The essay will be published in the annual proceedings of the Association.

John C. McClintock, M.D.
Secretary

ARE MALPRACTICE CLAIMS PREVENTION PROGRAMS WORTH WHILE?

By Howard Hassard, Esq.
of Peart, Baraty & Hassard
San Francisco, California

Suppose we analyze the title of this address point by point, in an effort to discern the underlying factors that cause the question to be posed.

1. First, "WHAT IS TO BE **PREVENTED?**"

To answer this, a brief historical review is appropriate. Regan tells us that in the decades between 1900 and 1940 there was a 540% increase in the number of malpractice cases that reached the appellate courts in the United States as a whole. In the year 1940 the total number of such cases was 33. In 1953 there were 32.

These years were picked at random. They indicate a plateau, which practical experience confirms. The volume remains at least five times the 1900 incidence.

Dr. Regan's statistics demonstrate the tremendous rise in the incidence of malpractice suits in the past fifty years. Further, a little research in a law library discloses that the increase is perhaps more noticeable in the largest metropolitan centers, but that it is by no means confined to any one area. It can not be localized.

Lest physicians assume that they are being singled out by the public for special torture, it must also be understood that all forms of personal injury litigation have dramatically increased since World War I. Mass production of the automobile has wrought many changes, one of them being increased frequency of accidental injuries or death and increased resort to law for redress.

When people become suit conscious in general, they tend to think in terms of legal action for any and all real or fancied grievances. Fifty years ago a guest in a home would consider it ungentlemanly to sue his host, because after the third martini he wandered through a plate glass window. Now, suits of this type are not too uncommon.

With the public litigation conscious, there is an evitable tendency to commence legal action, not only when warranted, but also when there is just a bare chance of recovery; sometimes even when there is no legitimate cause for complaint.

Within the field of professional liability, the main activity that can be "prevented" is the fraudulent or false or vindictive or long-shot suit that is not predicted on just cause. The meritorious action not only cannot be prevented, but ought not be impeded. However, to separate the sheep from the goats and thereby reduce the incidence of nuisance claims would drastically curtail professional liability actions, and in of itself is a justifiable reason for a claims prevention program.

2. Second, "WHAT IS MALPRACTICE?"

"Malpractice" is the commonly used term to describe the liability at law of physicians and surgeons for torts committed during the course of their practice. Properly stated, it is "professional tort liability". A "tort" is a violation of one's duty to use reasonable precaution for the safety of others, resulting in an injury to another.

By law, we all are obliged at all times to be reasonably careful of the safety of others. This applies to each of us everywhere. If one of you should suddenly jump up, knocking over your chair in the process, and if the chair injures the person sitting behind you, you may find yourself the defendant in a tort action for having failed to use ordinary care. Most of you, no doubt, carry insurance against this liability called "public liability coverage".

As applied to physicians, the law requires that each physician possess the average skill found amongst fellow-practitioners doing the same work in his own community, and that he at all times exercise ordinary prudence and thoughtfulness in the application of his skill to his patients. The failure to live up to these obligations is called "malpractice".

The ordinary personal injury suit against the average person involves his pocketbook only. Hence, if he is adequately insured he gives the fact of a suit against him a very superficial concern.

But to a physician, or any other professional man, a professional liability suit involves something else that is much deeper, much more important. His professional reputation, his very livelihood, his pride and his self-respect are all at stake. In his mind, it is an accusation akin to a charge of dishonorable conduct. It is huiliating.

Therefore, we must not look solely to the financial aspects of malpractice.

Each physician, in order to avoid the humiliation of a liability suit, must become thoroughly familiar with the various rules of law, that together, constitute the law of malpractice. He must intimately know the rules of the game.

Medical schools are not law schools. Hence the practicing physician must acquire his knowledge of the law that governs him after he is in practice, and he must either acquire this knowledge haphazardly or systematically. He will pick up his concepts either on a hit-or-miss basis from dubious sources, or he will acquire it in an orderly fashion from teachers that know at least as much as the student.

A systematic, well-organized professional educational program in the field of malpractice has the possibility of achieving a tremendous reduction in the incidence of malpractice claims and suits. By educating physicians to their legal responsibilities and to the required conduct in carrying out those responsibilities, approval of the law, the public and patients may be obtained and maintained.

Malpractice has another most important facet that must be understood in any discussion of a claims prevention program.

All physicians today are, or ought to be, insured against professional liability. This insurance, however, is far from the ordinary run-of-the-mill public liability coverage.

It is true that the legal theory underlying responsibility for running down a pedestrian or for burning a patient with an ultra-violet lamp are one and the same; but beyond that, all resemblance ceases. From the moment of knowledge, the investigation, claims analysis, preparation for defense, and defense of an automobile personal injury case are standardized, not too difficult to master, and fit into the ordinary operations of any insurance claims department or law office.

Neither the investigation, claims analysis, preparation for defense, or defense of a malpractice claim are in any way comparable to that of other personal injuries. An investigator must know enough about the practice of medicine to be able to know what to investigate when a claim of malpractice has been made. The analysis of the results of the investigation require expert medical judgment. The defense of a malpractice case in court involves specialized training in this field. The rules of evidence and the substantive rules of law are different than in the ordinary personal injury case. The lawyer must understand the medical aspects thoroughly, so that he can communicate in ordinary English to the judge and jurors the issues and facts involved.

Recently, I appeared in Federal Court at Salt Lake City, and white awaiting the commencement of our trial, I sat in the courtroom and observed the case that preceded us, which was a suit by the Navajo Nation against the United States for damages resulting from the destruction of Navajo horses by agents of the United States Indian Service. The witnesses were all Navajo Indians who could not speak English; and interpreting was necessary; each question was translated by the interpreter into Navajo; when the witness replied the interpreter translated the answer. The net result was that the trial took twice as long as it would have if court, jury, counsel, and witnesses all spoke in a commonly understood tongue.

This is an extreme example, but a malpractice trial is similar. Medical terminology must first be understood by counsel, and then converted into language understood by judge and jurors.

It is obvious that insurance companies that have a few malpractice policies outstanding in a community cannot acord to set up separate specialized malpractice claims departments, or employ attorneys who specialize in malpractice defense. Premium volume is too small to warrant tailor-made or custom handling. To justify expenditure of funds for special treatment of malpractice policies, there must be a substantial volume, which means all or most of the physicians over a large area.

Needless to say, an insurance carrier, unless it has a large volume, cannot afford the further expense of a specialized prophylaxis or prevention program. Fire insurance companies, with all of their business at risk, can afford to spend substantial sums of money in fire prevention programs. Workmens' compensation insurers, with hundreds of thousands of employees insured, can afford to spend money on safety programs. But an insurer with a few hundred scattered physicians insured simply can't do it.

One essential of insurance is spread of risk. The whole field of physicians' professional liability in the United States is limited to approximately 160,000 physicians. If one company insured all, the insurance base would be minor, as compared to twenty million automobile owners, or fifty or sixty million homes, or the sixty to seventy million people covered by workmens' compensation.

Hence, one of the inherent problems in malpractice insurance is the limited market, and the consequent limited ability, of any one carrier to conduct the equivalent of a safety program.

3. Third, "WHAT IS A **PROGRAM?**"

In northern California, twenty-three county medical societies now have professional liability insurance contracts with the same insurance carrier, American Mutual Liability Insurance Company. In all, close to four thousand physicians are participating. While each county has its own group contract, the program is substantially the same from Fresno in the south to Siskiyou in the north.

Each county has a medical committee. In the early stages of each claim against a physician, the facts are fully investigated by claims representatives of the insurer, who devote their entire time to this type of work. As claims adjusters, they are "specialists" in professional liability work.

When the case is investigated, the facts are then submitted to the society's medical committee. The members of the committee discuss and debate the case, sometimes call for more investigation, sometimes ponder their decision at length, on other occasions reach a conclusion fairly rapidly.

In any event, the committee satisfied itself that it has considered all the material facts, and the recommends either

1. That the claim has merit and that the claimant should be fairly compensated; or

2. That the facts do not disclose any medical dereliction on the part of the accused physician, and that the case should be defended.

To date, in each instance the insurance carrier has abided by the recommendations of the appropriate committee.

The functioning of the society's committee does not, however, terminate with recommended action. If it has recommended that the case be defended, the members of the committee then actively and voluntarily assist in the preparation of the defense and in the actual trial of the case. To the defense attorney, this is of invaluable aid. Incidentally, it reduces the cost of defense substantially.

Finally, the members of the various medical committees also appear before various professional

audiences, and from their experience undertake to explain to the practicing physician the legal pitfalls that beset a doctor and the conduct which be adhered to to avoid legal liability.

The physicians who serve on these committees obtain "occupational experience". They know from having experienced specific cases what the problems are, and what information a physician needs to conduct "good practice" rather than "bad practice".

Admittedly, the program in California is far from perfect. A great deal more could be done, and should be done, to inform all physicians of their legal obligations, and to enable them to avoid the humiliation of a malpractice suit.

More manpower than has been available to date is no doubt needed. But at least we believe that this program is a sensible beginning. We feel that malpractice claims are intelligently analyzed, and that time and money is not wasted in endeavoring to defend the indefensible. On the other hand, unwarranted claims are discouraged in that nuisance settlements are not made. If the case is unjust it is defended; it is not settled, no matter how cheap it can be bought.

Physician participation in the trial of cases is obtained on a voluntary cooperative basis, and above all the physicians who serve on the medical committees become experienced in and aware of the problems involved, and are able to do missionary work amongst their colleagues.

The results of such a program require years to become really measurable. We feel that at least ten years, and probably fifteen years, must elapse —and we are now only in the fifth full year — before any reliable inventory can be made.

However, the results to date indicate to us who are close to the picture that we have at least halted that steady increase in the incidence of malpractice claims and suit noted by Dr. Regan, that commenced early in the century and that has continued without interruption for fifty years.

"Some few of the companies are reluctantly writing business at the Bureau rates. One company will write for only their own agents and will cover x-ray therapy, providing the assured has been certified by the American Board of Radiology or is a member of the American Roentgen Ray Society or the Radiological Society of North America. Another company will write for its own agents only and will not write or renew existing policies for brokers. In addition, the applicant must promise the company all of his insurance business as collateral."

Physicians are in jeopardy until the insurance industry again is **interested** in insuring them. This will not occur unless and until the risk in professional liability insurance is lessened materially. The **risk** won't decrease of its own accord. A real, vigorous and widespread but grass roots program — by the medical profession itself — to educate its members to their legal duties, to advise and assist when trouble brews, and to fight relentlessly all unjust claims, is the only prudent course of action, if disaster is to be avoided.

VALUABLE ARTICLES IN CURRENT JOURNALS

DIVERTICULITIS AS A SURGICAL ENTITY. Chas. S. White, Jr., M.D., Medical Annals of the District of Columbia, March, 1954. A good two page summary, the gist of which is that chronic and recurrent diverticulitis are amenable to a single stage surgical procedure.

MITRAL STENOSIS. This is Part II of an article by Paul Wood, Physician-in-Charge, Brompton Hospital. In British Med. Journ., May 15, 1954.

Part I appeared in the May 8th issue of the same journal. These two papers represent the lecture given before the San Francisco Heart Association on October 20, 1953. These two papers are too extensive for summarizing and will need to be read in their entirety to be fully appreciated. They represent quite a complete and detailed discussion of Mitral stenosis.

DISSEMINATED BREAST CANCER, Hormone Treatment. Ronald W. Raven, British Med. Journ. May 15, 1954.

Dissemination of breast cancer is one of the most distressing conditions which can face patient or surgeon. Anything which can lighten the darkness of this gloomy situation is welcome. Some patients are sensitive to variation of their sex hormones, as shown by improvement after oophorectomy, adrenalectomy, and the administration of either the male or female hormone. This author reports on six patients who received benefit from hormone therapy, two of whom were in excellent health four and a half and five and a half years later.

ELECTROLYTE CHANGES IN THE BLOOD. Another in the series on "Clinical Pathology in General Practice." By Paul Fourman, in British Med. Journ., May 15, 1954. The general practitioner occasionally needs to become interested in the electrolytes, — usually regarded as a hospital procedure. This field of laboratory work is a terra incognita to the general practitioner (and incidentally to this reviewer), and this refresher article will, if he is interest, help to dispel his ignorance.

ONCOLOGY IN GENERAL PRACTICE. V. J. Dardin, M.D., Washington, D.C., Medical Times, May, 1954. The study of tumors, to the majority of general practitioners, is a mystifying one. Usually, after discovering the presence of a tumor, the patient is passed along quickly to some specialist. This article is not intended to be a complete, or even a thorough, study of tumors, but presents a few fundamental principles which are

useful in making this difficult subject more easy to understand.

HEART SYMPOSIUM. In November, 1951, and again in September, 1953, the Minnesota Heart Association, sponsored a symposium, first on Rheumatic Fever and then on Advance in Cardiovascular Physiology and Surgery. The imposing list of papers were published in three issues of Minnesota Medicine, but for convenience have recently been gathered together in a single reprint of 132 pages. This very valuable contribution is available in the Maricopa County Medical Library, as well as the three issues of Minnesota Medicine (January, February and March, 1954) containing them.

CANCER OF THE LUNG, Increase In. Harold F. Dorn, M.D., National Institute of Health, Bethesda, Md. Industrial Med. and Surg., June, 1954.

Cancer of the lung in men is a disease of major medical importance. It is now only exceeded by cancer of the stomach as a cause of death from malignancy in males. It accounts for nearly one out of three deaths from cancer among men between 50 and 60 years of age. There is every indication that this increase will continue.

LUPUS ERYTHEMATOSUS and the L. E. CELL. Wm. A. Wiepert, M.D., Acon, Conn. The Conn. State Med. Journ., June, 1954. The most important advance in the diagnosis of systemic lupus erythematosus was the demonstration of the L. E. cell by Hargraves and associates in 1948. The technic of demonstrating this cell type, as well as a discussion of the disease, and the so called "L. E. phenomenon" are discussed in some detail.

A.C.T.H. AND CORTISONE, Long Term Therapy. McGehee and MacLean, British Med. Journ. May 22, 1954. These drugs have now assumed a most important place in the treatment of a number of diseases, such as the generalized collagen diseases, certain severe skin diseases, and some eye disorder. Treatment of 44 patients is described under four headings; 1) endocrine disorders, Addison's disease, hypopituitarism and congenital adrenal hyperplasia; (2) collagen diseases, polyarteritis nodosa, disseminated lupus erythematosus, subacute collagen disease, scheroderma, rheumatoid arthritis; (3) skin diseases, pemphigus, exfoliative psoriasis; (4) eye diseases, choroiditis, chronic iridocyclitis.

TREATMENT OF COMMON SKIN DISEASES. Herman Beerman, University of Penna., Depts. of Dermatology. Penna. Medical Journal, June, 1953.

Written for general practitioners, it outlines the general principles of treatment including the qualifications of the practitioner who aims to prescribe for skin diseases. Then he gets down to brass tacks with some practical outlines of treatment.

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TABLE OF CONTENTS

OFFICERS

ARIZONA MEDICAL ASSOCIATION, INC., DIRECTORY 6A
WOMAN'S AUXILIARY DIRECTORY 6A

ORIGINAL ARTICLES

PEPTIC ULCER AND HYPERTENSION 359
Zalman Plotkin, M.D., Whipple, Arizona
DIAGNOSIS AND TREATMENT OF DISEASES OF THE PANCREAS 364
William P. Young, M.D., Madison, Wisconsin
SOME FACTORS AFFECTING THE RADIO-THERAPEUTIC APPROACH TO CARCINOMA OF THE CERVIX 370
Bernard M. Stone, M.D., San Francisco, California

MEDICAL PROBLEMS

PHOENIX CLINICAL CLUB 372
Robert S. Flinn, M.D., Phoenix, Arizona

THE PRESIDENT'S PAGE

PUBLIC SERVICE AND ELECTION TIME 382
Oscar W. Thoeny, M.D., President, Arizona Medical Association, Inc.

EDITORIAL

NURSING SCHOOL IN TROUBLE 383

TOPICS OF CURRENT MEDICAL INTEREST

RX., DX., AND DRS. 384
Guillermo Osler, M.D.
FUNDS ALLOCATED FOR EXPENDED HILL-BURTON CONSTRUCTION PROGRAM 380
NARCOTICS BUREAU WORKING ON ORAL PRESCRIPTION LAW 380
HILL-BURTON CONSTRUCTION 387
MARICOPA COUNTY MEDICAL SOCIETY CONFERENCE ON RECENT ADVANCES IN MEDICINE 387
PROGRAM OF THE BASIC SCIENCE SEMINAR 388
PRELIMINARY NOTICE POSTGRADUATE MEDICAL SEMINARS 389
AMERICAN OCCUPATIONAL THERAPY ASSOCIATION 389
INTERESTING TOPICS — Recommended Reading 390
W. Warner Watkins, M.D., Phoenix, Arizona
ARIZONA PHARMACEUTICAL PAGE — Keeping Posted 391
Joseph A. Zapotocky, Ph.D., Tucson, Arizona
ORGANIZATION PAGE — Civics 392
Norman A. Ross, M.D., Phoenix, Arizona
PUBLIC RELATIONS INSTITUTE 394
HEART DISEASE COURSE 394
ANNUAL MEETING INTER MOUNTAIN PSYCHIATRICS ASSOCIATION 394

WOMAN'S AUXILIARY

MENTAL HEALTH 395
Mrs. John K. Bennett, Tucson, Arizona

DIRECTORY

LABORATORIES 30A
DRUGGISTS DIRECTORY 31A
SANATORIUM DIRECTORY 33A
PHYSICIANS DIRECTORY 38A

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ARIZONA MEDICINE
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Original ARTICLES

PEPTIC ULCER AND HYPERTENSION*

Zalman Plotkin, M.D.
Whipple, Arizona

THE study of the relationship of peptic ulcer and hypertension has been almost neglected in medical investigation. A review of the medical literature does not offer any clear-cut evaluation of this interesting problem. Only rare and casual comments on this subject have been encountered. Meyer A. Zeligs(1) ascribes to the peptic ulcer patient low-normal blood pressure as one of his characteristic features. S. C. Robinson and M. Brucer(2) found the systolic and diastolic blood pressures of 250 men with gastroduodenal ulcers to be lower than in an unselected group of 7478 men. On the other hand R. W. Wilkins(3) states casually that hypertension and peptic ulcer are common diseases and frequently occur together. Schenken(4) stated that 19 out of 81 patients who died of gastroduodenal hemorrhage, and on whom postmortems were done, had concomitant hypertension. But he made the diagnosis of hypertension in two patients on the basis of cardiac hypertrophy only, and in twelve patients on the basis of a diastolic pressure of 90 mm. Hg. and cardiac hypertrophy. It is felt that those patients had no essential hypertension but arteriosclerotic heart disease. One had a blood pressure of 130/76 with severe gastric hemorrhage, and the remaining four patients had a diastolic pressure of 100 or more. G. Watkinson(5) in a postmortem survey into the relation of peptic ulcer with other medical disorders did not mention hypertension among a list of other associated conditions found in 364 peptic ulcer cases.

These facts, and the observation over a period of ten years that among a group of about 100 peptic ulcer patients in private practice only one hypertensive patient was found to develop duodenal ulcer, prompted a thorough investigation of the simultaneous occurrence of peptic ulcer and hypertension.

Method of Study: A search of the hospital records for the last four years disclosed 125 definite peptic ulcer patients. All of the studied gastric and 95% of the duodenal ulcer cases exhibited typical x-ray changes in association with characteristic clinical and laboratory findings. Of the 5% of duodenal ulcer patients who did not yield positive radiological ulcer signs during their hospitalization, some were found to have done so in the past, and in the remainder all the other clinical and laboratory criteria for peptic ulcer were sound. Doubtful cases were rejected.

Also, a review of 93 records of patients treated for essential hypertension during these four years made sure that no ulcer patient was hidden among them.

The peptic ulcer patients were divided into five age groups. This was done in order to comply with the classification of A. M. Master(6) and his associates of hypertension at different age groups. The mean systolic and diastolic pressures in each age group of peptic

* From the Department of Medicine, Veterans' Administration Center, Whipple, Arizona. Read before the VA State Inter-hospital Meeting at VA Hospital, Phoenix, Arizona.

ulcer study cases were presented, as were the number of hypertensives among the ulcer patients.

Age	Number of patients	Mean systolic pressure	Mean diastolic pressure	Number of ulcer patients with hypertension	Hypertension in percentages	Hypertension in percentages in normal population °
	IN ULCER GROUP STUDIED					
20-40	36	114	75	None	None	
40-49	26	120	76	None	None	10.3
50-59	29	130	77	None	None	20.5
60-69	28	132	78	2	7.0	26.6
70-79	6	138	80	None	None	32.6

° Master, A. M. Marks, H.H. and Dack, S., 1953 J. Amer. Med. Ass. 121, 1251.
Hypertension in percentages in normal male population
Hypertension in percentages in normal female population 13.3, 24.0, 29.2, 34.0

Results: As seen from the table, there were only two ulcer patients who also were hypertensives. According to the figures of Master and his associates about 19% of individuals in the age group 20 to 79 have essential hypertension. That should have yielded about 23 patients with essential hypertension in the 125 ulcer patients, but only two were found.

One can notice also that in the oldest age group, 70 to 79, where the incidence of hypertension is the greatest, there is the least incidence of peptic ulcer; and among the age group of 20 to 40, where the incidence of hypertension is the lowest, there is the greatest incidence of peptic ulcer.

In addition to the above it stands out prominently that the mean systolic and diastolic pressures in each age group of the ulcer patients are lower than in the prevalent accepted mean pressures in the corresponding age groups of the normal population.

Discussion: The chief interest of this study is centered around primary conditions: Primary or essential hypertension and 'primary" peptic ulcer. For it is they that require more search for the as yet unknown mechanisms of development and initiation of the disease processes.

Primary peptic ulcer is to be distinguished from secondary peptic ulcer, like primary hypertension is distinguished from secondary hypertension. Just like the removal of the cause leading to secondary hypertension would make the hypertension vanish, or like the abolition of coarctation of the aorta would erase the hypertension brought on by it, so would the surgical cure of diaphragmatic hernia eliminate the ulcer created because of it.

Many gastroduodenal ulcers have been proven to be secondary to polycythemia, burns, corrosive poisons, infectious agents, Vitamin C defciiency, hyperparathyroidism, protein deficiency, decompensated heart disease and chiefly cor pulmonale with congestive failure, vomiting and trauma. The formation of gastric ulcers following phytobezoar and trichobezoar, or of esophageal ulcers after being acted upon by a stomach tube, are well known. Peptic ulcers secondary to protein deficiency among the natives of southern India responded to high protein diet; and ulcers secondary to starvation in certain parts of Europe and Asia during the last world wars were cured by a supply of regular foods. Vitamin A deficiency was shown to cause gastroduodenal ulceration due to lack of anti-ulcer mucus formation. All these ulcer cases are characterized by a recognizable etiologic agent, and their prevention and cure lies in measures against the primary cause. As the etiologic agents differ, so manifold are the therapeutic regimes. The same applies to secondary hypertension where for example surgical intervention for pheochromocytoma will ameliorate hypertension, and so will proper antibiotics applied in time prevent hypertension ultimately caused by pyelonephritis.

The search for coexistence of peptic ulcer and secondary hypertension would be of minor importance. . The ulcerations of the gastrointestinal tract in uremia are well accepted as secondary ulcerations. With the exception of periarteritis nodosa, polycythemia is probably the only disease where both hypertension and ulcers develop secondarily: Secondary hypertension due to hypervolemia, and secondary ulcers apparently caused by thrombosis of minute gastric or duodenal vessels.

There is no need to dwell any more upon the subject of these two secondary abnormalities. Suffice it to say that it was also discussed in order to stress the need for elucidation of the relatoinship of their "parent diseases": Primary or essential hypertension and primary peptic ulcer.

The 125 peptic ulcer and the 93 hypertensive

hospital cases represented primary conditions. As mentioned already, no peptic ulcer was discovered among the 93 hypertensives, and only two of the 125 primary ulcer patients developed hyptertension. These means less than 2% of peptic ulcer concomitant with hypertension in the hospital group, and if we add the 100 ulcer cases from private practice where only one hypertensive revealed an ulcer it would mean only three cases out of 225, or less than 1½%.

The significance of this revelation lies not so much in the fact that it can be utilized as an aid in differential diagnosis, but more in the fact that it might serve as a guide toward the goal of clarification of the etiology of both primary maladies. The common denominator in both conditions is their relationship to the autonomous nervous system. While essential hypertension is tied up with the sympathetic system, primary peptic ulcer is associated with the parasympathetic or vagus nerve. Vagus nerve section is an effective treatment for primary peptic ulcer, and so is sympathectomy for primary hypertension. Following sympathectomies peptic ulcers and hemorrhages have been reported to appear.

Druckerman(7) and his co-workers have recently reported no ulcer recurrences in a group of duodenal ulcer patients in which vagotomy was performed with gastric resection. Walters and Chance(8) prefer to perform gastric resection with vagotomy as recommended by Johnson and Orr in duodenal ulcer patients who have unusually high concentrations of gastric acids or hereditary characteristics that indicate that they might be candidates for recurring ulceration.

B. Steinman(9), who reported a case of bleeding peptic ulcer following sympathectomy for essential hypertension, cited Mason and Pollard who found among 1498 patients that underwent bilateral sympathectomy for severe hypertension, 13 with complications due to peptic ulcers. Only 8 of those patients had gastroduodenal ulcers prior to the sympathectomy, four developed ulcers following sympathectomies, and the exact time of ulcer development in one patient could not be established with certainty. B. Steinman emphasizes these findings to point to the eminent role the parasympathetic system is playing in the genesis of peptic ulcer.

The psychic or nervous derangements which originate in the higher cortical centers stimulate either the parasympathetic or the sympathetic pathways of the autonomous nervous system and corresponding disturbances of normal functions with ultimate organic changes follow.

In primary peptic ulcer the natural chain of events is as follows: Emotional disturbances originate impulses in the cortex which stimulate the middle nuclei of the hypothalamus, travel along the parasympathetic fibres causing liberation of acetycholine with hypersecretion, hypermotility of the stomach and duodenum, and finally ulcer formation. Locally, in the stomach and duodenum, it is the lesser curvature and the bulb rdespectively that are more prone to develop ulcers because the vagal effects are most productive there with high acid-pepsin chyme aided by an anatomic fault of less vascularity of those portions.

In primary hypertension the same mode of action ensues: Emotional stimuli originate impulses in the cortex which stimulate the posterior nuclei of the hypothalamus and travel along the sympathetic branches with liberation of adrenalin or rennin (definitely not established) and resulting arteriolar constriction with progressive organic vascular-tree changes.

Franx Alexander(10) maintains that the emotional stimuli are specific and consist of frustrated dependent demands in the peptic ulcer patient and suppressed hostility in the hypertensive. Thus, an implication that specific emotional stimuli stimulate specific pathways of the vegetative nervous system would fit well with his concept.

The finding of the present study that primary hypertension and primary peptic ulcer rarely occur together makes it appear that certain personalities show selective affinity for one malady or the other. Alvarez(11) describes as the ulcer type the keen, alert, sensitive man who is constantly driving himself. He believes that the hereditary factor is very important. It may also be stated in addition that the pattern of reactivity is an inherited trait, and is best manifested clinically in two distinct entities, namely that of primary peptic ulcer and primary hypertension..

As to the few exceptions to this rule, namely the three hypertensives among the 225 peptic ulcer patients, they are the most intriguing cases and should offer a fertile soil for psychosomatic investigation. We doubt whether an active bipartisan neurogenic policy ever exists, or whe-

ther an active concomitant occurrence of both primary diseases is real. Definitely no activity of both diseases at the same time was manifested clinically in those few exceptions encountered in our study. The two hospital patients showed no progressive hypertensive disease during the time of active peptic ulcer disease. Following successful surgery with no gastrointestinal complaints since, there has been progressive cardiovascular disease with increased hypertension in one 63 year old patient. One year prior to surgery his systolic pressure was 172 and the diastolic 104. On September 12, 1953, three years after surgery, his blood pressure reading was 196/120. The 66 year old patient revealed systolic hypertension of 190 and a diastolic pressure of 95, six months before surgery on April 17, 1952. Ten months after surgery his blood pressure has been ranging from 216 to 240 systolic and 108 to 120 diastolic. However, he has not as yet shown hypertensive retinopathy or cardiac enlargement on x-ray studies. The patient from private practice was a 50 year old male who has had essential hypertension for 16 years. He showed marked left ventricular hypertrophy and widening and tortuosity of the aorta and 2nd degree A-V nicking in the eye grounds. He never had albuminuria, glycosuria, congestive failure, coronary episodes or blood dyscrasias. During the last 8 years, while his systolic pressure used to range between 180 and 200 and the diastolic between 115 and 125 mm. Hg., he experienced three episodes of melena lasting for 2 to 3 days each time, with complete recovery following bed rest and conservative therapy. GI series was negative the first time. The second time no x-ray studies were done as he also had epistaxis and the blood pressure was entertained as the cause of his melena. Surprisingly he did show a small crater and defective filling of the duodenal bulb after his third episode of melena. He never experienced even the slightest abdominal pain, epigastric fulless or heartburn, and except for paroxysmal melena he revealed no symptoms at any time compatible with peptic ulcer.

At this point we would like to emphasize that the aforementioned cases of Mason and Pollard showed not only a low simultaneous occurrence of both diseases, but that those exceptional cases which constituted less than 1% of their group demonstrated best activity of one malady when progression of the other disease was depressed. It was following sympathectomies and suppression of hypertension that eight patients exhibited gastrointestinal hemorrhages and four developed new peptic ulcers.

Besides the psychogenic behavior pattern and the neurogenic reactions that differentiate the primary hypertensive from the primary ulcer personality, there are some other stigmata with which they are mostly and diversely associated. The second tends to be underweight or of normal weight and is seldom overweight and has predominantly a slender, narrow or linear type build. The first tends to be overweight or normal and is seldom underweight, and is the lateral or broad chested type with greater abdomen circumference at the level of the umbilicus. The incidence of primary peptic ulcer is greater in the second, third and fourth decades when the number of asthentic types is more prevalent, and essential hypertension is less frequent. Women offer a greater percentage of sthenic types and in proportion less peptic ulcer cases and more hypertensives. In infants and children where primary hypertension is almost never found, the occurence of peptic ulcer is not infrequently discovered if only looked for.

In our hospital records no notes were made of abdomen or chest circumference, but of weight and height. The 93 hypertensives revealed sixteen times more obesity than the 125 ulcer patients. The same was noticed in the approximately 100 ulcer patients and many hypertensvies in private practice.

It is important to take account of the fact that only 93 hypertensives were treated at the hospital during a period of four years when the number of ulcer patients treated at the same time amounted to 125. The incidence of essential hypertension in the general population is at least three times greater than that of peptic ulcer, bu it lags behind in the hospital population. This fact reaffirms a known feature in the mental behavior of the peptic ulcer patient as distinct from one hypertensive. The ulcer patient likes to anchor himself in the hospital. Subconsciously he strives for shelter, security and dependency. Many of them who hide or mask this subconscious dependent desire by overcompensation with independent, energetic and aggressive acts break down as the conflict increases. They then find relief in the hospital which offers the best place for

attention, care and dependency. The patient afflicted with essential hypertension, on the other hand, exhibits an opposite pattern in his mental behavior which explains the fact of lesser numbers of hospital patients among this group.

The neurogenic origin of peptic ulcer was postulated by Comparetti as early as 1790; and it was Carl Rokitansky in 1841 and Schiff(12) in 1845 who blamed overstimulation of the vagus nerve for perforating and bleeding ulcers. Cushing (13), about 100 years later, pointed to the hypothalamus whose irritation might cause alterations in gastric motility, secretion and circulation leading to ulceration. Bu their conceptions had to give way to the simpler ideas of Virchow and Aschoff(14). The minds of the leading clinicians of that time were more impressed by Aschoff's "Magenstrasse" and Virchow's cellular pathology. The "local" changes in the gastrointenestinal tract caused the higher controlling forces to be ignored or forgotten.

Our suggestion to classify peptic ulcer into primary and secondary entities like primary and secondary hypertension should not be criticized solely on the basis of response of ulcers to vagotomy, as there are many pitfalls to this type of surgery. It is hard to cut all the vagi fibres, and then nausea, diarrhea and other disturbances might ensue after this type of operative procedure, as the vagus fulfills other important functions the elimination of which leads to new handicaps. It is rather the complete understanding of all the factors involved in the two disease processes as presented in this paper that should provoke sound reasoning and thoughtful enlightening of this interesting problem.

Summary: One hundred twenty-five hospital records of ulcer patients were reviewed for the concomitant incidence of essential hypertension, and only two were found to have had both diseases coexisting. The addition of 100 cases of peptic ulcers from private practice with the presence of only one hypertensive developing peptic ulcer makes the coincidence of both maladies less than 1½%.

The presence of "secondary" peptic ulcer is stressed and an analogy is made with secondary hypertension.

The common denominator in both primary conditions and their relationship to the autonomous nervous system is discussed.

Signs of progressive cardiovascular hypertensive disease set in only after cure from the ulcer in the two exceptional hospital patients. The hypertensive patient in private practice had three episodes of melena and never any other ulcer symptoms.

A suggestion is offered to classify peptic ulcer like hypertension into primary peptic ulcer and secondary peptic ulcer.

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REFERENCES

1. Zeligs, M. A.: Psychosomatic Considerations of Gastric Disease, Calif. Med. 67:368, Dec., 1947.
2. Robinson, S. C., and Brucer M.; The Body Build of the Male Ulcer Patient, Am. J. Digest, Dis. 7:365, Sept., 1940. Robinson, S.C. and Brucer, M.: Body Build and Hypertension, Arch. Int. Med., August, 1940, 393.
3. Wilkins, R.W.: Hypertension — Recent Trends in Treatment, The Med. Cl. of N.A., 37, No. 5:1303, Sept., 1953.
4. Schenken, J.R., Burns, E.L. and Maes, U: Role of Hypertension and Pancreatic Erosion in Massive Fatal Hemorrhage from Gastric and Duodenal Ulcers, Surg. Gyn. and Obst. 74:1058, June, 1942.
5. Watkinson, G.: Preliminary Communication on the Postmortem Survey into Relation of Peptic Ulcer with Other Medical Disorders, Gastroenterologia 76:325, 1950, 1951.
6. Master, A. M., Marks, H. H. and Dack, S.: Hypertension in Percentages in Normal Population, J. Am. Med. Assn. 121:1251, 1943.
7. Druckerman, L. J. Weinstein, V.A., Klingenstein, P. and Colp. R.: Duodenal Ulcer Treated by Subtotal Gastrectomy with and without Vagotomy, J. Am. Med. Assn. 151:1266, Aprill 11, 1953.
8. Walters, W., and Chance, D. P.: Vagotomy as a Prophylactic and Curative Procedure in Peptic Ulcer, J. Am. Med. Assn. 153:993, Nov. 14, 1953.
9. Steinman, B.: Sympathektomie und ulcus pepticum, Schweizerische Medizinische Wochenscrift. 80:695, July 8, 1950.
10. Alexander, Franz: Psychosomatic Medicine.
11. Alvarez, W. C.: Light from the Laboratory on Causes of Peptic Ulcer, A. J. Surg. 18:209, 1932.
12. Schiff, M.: De vi motoria caseos encaphali inquisitiones experimentales, Bockenheim, 1845, 54 pp.
13. Cushing, H.: Peptic Ulcers and the Interbrain, Surg. Gyn. & Obst 55:1, 1932.
14. Aschoff. L.: Lectures on Pathology, N.Y., P.B. Hoeber, Inc. 1924, 279.

DIAGNOSIS AND TREATMENT OF DISEASES OF THE PANCREAS

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SURGERY for diseases of the pancreas has not progressed as rapidly as other abdominal surgery. There have, however, been changes in the surgical treatment of some pancreatic diseases in the past few years. Some diseases of the pancreas are very successfully treated by surgery. The currently used surgical procedures for treatment of certain other diseases of the pancreas are yet to be evaluated.

Surgery for diseases of the pancreas includes many varied procedures, some of which are listed as follows:

Resections of portions or possibly all of the pancreatic gland,
Removal of stones from pancreatic ducts can occasionally be done,
Removal of encapsulated adenomata from the gland substance,
Marsupialization or drainage of pancreatic cysts or abscesses,
Transforming a pancreatocutaneous fistula into a pancreatogastric or pancreatojejunal fistula,
Ridding the biliary tract of pathology,
Sphincterotomy or sphincteroplasty of the sphincter of Oddi,
External drainage of the biliary system,
Bypassing the head of the pancreas with the biliary system,
Bypassing the head of the pancreas with the pancreatic duct,
Bypassing the duodenum with a gastroenterostomy or gastric resection,
Thoracolumbar sympathectomy or splanchnicectomy, and
Vagotomy.

Some consideration of the anatomy of the pancreas and its anatomical relationships is necessary before the consideration of the discases of the pancreas and corrective surgery. The pancreas lies retroperitoneally and crosses the body of the second lumbar vertebra, the aorta, the inferior vena cava, the right ovarian or spermatic veins, the vessels to both kidneys, the portal vein, and splenic vein, and the left kidney. Anteriorly the spleen is covered by parietal peritoneum and the lesser sac separates it from the stomach, but the tail lies in contact with the splenic flexure of the colon. The splenic artery runs along the superior border of the pancreas. The superior mesenteric vessels notch the inferior border of the gland. The head is in intimate contact with the duodenum and the terminal common duct passes through the substance of the head of the pancreas. Rarely pancreatic tissue will completely surround the duodenum, and this arrangement has been known to obstruct the duodenum. The arterial blood supply to the pancreas is quite variable, and damage to the blood supply of the pancreas at the time of gastric resection or other upper abdominal surgery has not infrequently resulted in acute pancreatitis; and the hepatic artery has been unknowingly sacrified, with fatal results, with resection of the pancreas. There are usually a main pancreatic duct and a secondary pancreatic duct, the ducts of Wirsung and Santorini, respectively. In about eight out of ten cases the common bile duct and the main pancreatic duct join before entering the duodenum, forming the ampulla of Vater and the duodenal papilla. The majority of the pancreatic gland is concerned with external secretion. There are from about one hundred thousand to over a million microscopic islands of Langerhans within the gland which are concerned with insulin secretion. These islands are more numerous in the tail of the pancreas. Usually more than 90 per cent of the pancreatic gland must be removed before surgical diabetes is produced. The enzymes of external secretion are proteolytic when activated by bile or other duodenal content. This same external secretion is not proteolytic as it comes directly from the gland. Trypsin in serum increases the coagulability of blood, and this factor may be important in the frequency with which thrombotic phenomena are seen when there is obstruction of the pancreatic duct. Ectopic foci of pancreatic tissue have been found most anywhere within the abdomen but most commonly along the stomach, duodenum, and jejunum. About one out of five Meckel's diverticula contains pancreatic tissue.

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There are certain general principles that apply to surgery of the pancreas. It is very important to use nonabsorbable sutures in suturing in and about pancreatic tissue. One must not leave a distal portion of the gland separated from the head of the gland or even partially separated where there is question of interruption of the ducts. Unusual care must be taken not to traumatize the pancreas during surgery in the upper abdomen, as even the pressure from the end of a retractor may result in the development of acute pancreatitis. Likewise, the blood supply about the pancreas should not be interfered with without accepting risk. Sinuses draining pancreatic juice are frequent following surgery on or about the pancreas, and surgical or traumatic wounds of the pancreas may lead to sinuses which drain pancreatic juice. It is important to drain the area of the pancreas when there is known or suspected injury to the pancreas.

PANCREATIC INJURIES.

The diagnosis of injury to the pancreas is difficult to make unless one bears in mind the possibility in all cases of upper abdominal injury and upper abdominal surgery, especially when delayed symptoms develop. The pancreas should not be overlooked during exploration of the abdomen following a penetrating wound. The nonpenetrating injuries may follow any direct trauma to the upper abdomen. The pancreas is particularly vulnerable as it crosses the body of the second lumbar vertebra. These nonpenetrating injuries are difficult to recognize, but should be suspected in all cases in which severe symptoms develop during recovery from injury. Except in industrial and military medicine, operative injuries are more common than other types of injury to the pancreas. Surgery on the stomach is the most common cause of operative injury to the pancreas, although the pancreas is vulnerable in most upper abdominal surgery and in surgery of the adrenals and left kidney. The surgeon is usually unaware of traumatizing the pancreas at the time of surgery, and too often fails to make the diagnosis when symptoms develop. The symptoms are the same as those of acute pancreatitis. The trauma may actually cause acute pancreatitis, as well as hemorrhage and necrosis. The symptoms consist of shock, upper abdominal pain extending into the back, nausea, vomiting, and hiccoughs. Actual physical findings may be lacking except when shock is present. The diagnosis, however, can be made if it is suspected by early determination of serum amylase. This test is simple and inexpensive and should be made use of any time there is an unsatisfactory course following upper abdominal surgery or trauma. Prevention is the best treatment, and prevention of injury of the pancreas during surgical procedures consists of keeping the tips of retractors away from the pancreas, avoiding injury to the blood supply to the pancreas, preserving the secondary pancreatic duct which may enter the proximal portion of the second part of the duodenum, and proper treatment of duodenal or gastric ulcers when they penetrate the pancreas. A duodenal ulcer should not be disturbed if it penetrates the pancreas unless adequate removal of the gastric antrum is not possible without mobilizing the ulcer. When there is marked inflammatory reaction about such an ulcer, it may be wise to do an exclusion operation or to carry out a vagotomy with gastroenterostomy. It is not wise to excise, suture, or try to cover the site of ulcer that has penetrated the pancreas. One should never carry the resection of the duodenum for a duodenal ulcer to a point that would endanger the secondary pancreatic duct or the common bile duct. Even a bleeding duodenal ulcer need not be resected. It is necessary only to place a suture ligature in the base of the ulcer.

The immediate surgical treatment of a traumatic injury of the pancreas consists of control of bleeding with nonabsorbable sutures and adequate drainage of the area. If acute pancreatitis develops, the treatment is medical. It is often difficult to differentiate between a surgical or other traumatic injury to a pancreatic duct and acute pancreatitis, but the treatment is the same with drainage of cysts or abscesses when they develop. Marsupialization is preferred to other forms of open drainage. This is discussed under pancreatic cysts. Spontaneous drainage or fistula formation may develop if there is injury to pancreatic ducts. Should a fistula continue to drain pancreatic juice, transplantation of the fistula to the gastrointestinal tract is then indicated. The use of sump pumps to carry off drainage is frequently desirable to protect the skin. Loss of fluids and electrolytes following the development of a fistula from the main duct must be compensated for by replacement. The return of such drainage to the gastrointestinal tract first through a small plastic tube inserted

into the duodenum through the nose, esophagus, and stomach, and later by transplantation of the fistulous tract to the gastrointestinal tract may improve the nutritional state markedly. The use of large doses of ephedrine or Banthine may suppress the external secretion of the pancreas enough to materially reduce the loss through a fistula and aid closure of the fistulous tract.

ACUTE PANCREATITIS

The treatment of acute pancreatitis is medical. No surgery should be performed during the acute phase of the disease if the diagnosis of acute pancreatitis is established even if there is known biliary tract pathology, unless there is obstructive jaundice and then only the simplest drainage of the biliary system should be carried out. If any other surgery is carried out during the acute phase of acute pancreatitis, the mortality is much higher than with medical management. A laparotomy should, however, be carried out if the diagnosis is in doubt. A perforated duodenal ulcer may also cause a high serum amylase level. Frequently, drains have been placed in the lesser omental sac when a laparotomy has been performed in the presence of acute pancreatitis. However, many who have tried to evaluate drainage in this situation feel that the peritoneal cavity should not be drained in the presence of acute pancreatitis. The free fluid in the peritoneal spaces may have some protective effect by inactivation and dilution of the proteolytic enzyme. Certainly, the presence of the peritoneal fluid causes no harm. No attempt should be made to release the compression of the pancreas by incising the peritoneum over it.

After the acute phase has subsided, any cyst or area of suppuration should be adequately drained. Methods of drainage are discussed under pancreatic cysts. If there are demonstrated gallstones or a nonfunctioning gall bladder, a cholecystectomy should be carried out. This, however, should not be done for about six weeks, after which time the inflammatory reaction should have subsided. At the time of such a cholecystectomy exploration of the common bile duct for stones should be carried out routinely and a sphincterotomy or, perhaps better, a sphincteroplasty should be done.

CHRONIC RELAPSING AND PROGRESSIVE PANCREATITIS

Chronic relapsing and progressive pancreatitis is not ordinarily a sequela of acute pancreatitis. As stated by Probstein and Sachar, it is quite possible that acute pancreatitis and chronic relapsing and progressive pancreatitis may have entirely different pathogenesis, a relationship analogous to that of acute infectious hepatitis and alcoholic cirrhosis of the liver. Before undertaking surgical treatment of chronic relapsing and progressive pancreatitis one must evaluate possible opiate addiction and possible deficiencies of internal and external secretion of the pancreas.

A varied assortment of surgical procedures is carried out for the treatment of chronic relapsing and progressing pancreatitis. If there is known biliary disease such as cholelithiasis, a cholecystectomy should be done; the common bile duct should be explored at this time and a sphincteroplasty of the sphincter of Oddi carried out after the manner of Smith and Jones. In doing a sphincteroplasty a generous portion of the sphincter is cut away so that when healing takes place the pancreatic duct and common bile duct have separate openings into the duodenum without any sphincter. Mulholland, however, has had good results with his internal sphincterotomy. Richmond and Colp have advocated gastric resection as a means of cutting down on the stimulation to the pancreas by diverting the gastric content from the duodenum. However, it is general believed that a gastric resection should be done only where there is other indication for such a procedure. If there are pancreatic cysts, drainage or marsupialization should be carried out. If a persistent sinus with drainage of pancreatic juice develops and there has been relief of the symptoms of the chronic pancreatitis, such a sinus should be transplanted into the jejunum. If the symptoms of chronic pancreatitis persist after drainage of a cyst, and a sinus draining pancreatic juice is present, one should then consider resection of the distal portion of the gland, especially if it contains the origin of the fistula. It might be possible to remove a stone from the main pancreatic duct to relieve obstruction of that duct, but calcinosis of the gland is much more common than actual stones within the duct and a lithotomy would not often be possible. Complete ligation of the pancreatic duct has been proposed as a means of controlling pain by destroying the entire portion of the gland devoted to external secretion. This would have the disadvantage that the patient would be de-

prived of important digestive juices. Thoracolumbar sympathectomy or splanchnicectomy is sometimes successful in releiving pain of chronic pancreatitis. These procedures on occasion are successful on either the right or the left side. If a paravertebral sympathetic block relieves pain when it is carried out on just one side, it can be expected that a unilateral splanchnicectomy or thoracolumber sympathectomy would be successful in relieving pain. Otherwise a one stage bilateral procedure should be carried out. Vagotomy has been proposed for relief of chronic pancreatitis pain but this seems to be of little value. After failure of other methods resection of pancreatic tissue is sometimes successful. The resection of the body and tail of the pancreas is not a particularly hazardous procedure and would seem in order if the calcinosis or fibrosis were located in this portion of the gland. The disease is usually limited to the distal pancreas when the etiology had been trauma which injured the pancreas over the vertebral body. In a few cases the Whipple resection (pancreatoduodenectomy) has been carried out with relief of most of the symptoms of chronic pancreatitis. For the most part, however, this has been done for this disease when carcinoma of the pancreas had been suspected but only chronic pancreatitis found in the surgical specimen. This is discussed under the subject of carcinoma of the pancreas. Total pancreatectomy has been proposed for treatment of this disease but as yet this form of treatment is little if any better than the disease. Total pancreatectomy is accompanied by a rather high mortality and, of course, absence of pancreatic digestive juices, and the resulting diabetes is a rather severe problem.

PANCREATIC CYSTS

Cysts of the pancreas are varied in type and include pancreatic cysts associated with polycystic disease in other organs, fibrocystic disease, inflammatory or traumatic pseudocysts and retention cysts, and neoplastic cysts. The neoplastic cysts are dermoid cysts, teratomata, cystadenomata, and cystadenocarcinomata. Echinococcus cysts of the pancreas have been reported. The cysts of surgical importance are pseudocysts, retention cysts, benign cystadenoma, and papillary cystadenocarcinoma. These cysts are found within the lesser peritoneal sac and usually present through the gastrohepatic or gastrocolic ligaments. Frequently a pseudocyst is actually an accumulation of fluid within the lesser sac with the lesser omentum along with the stomach and colon making up the wall of the cyst. The fluid within the cyst varies from clear liquid to thick brown or purulent material. Eighty-five per cent of the patients with pseudocysts have upper abdominal pain and 80 per cent have a palpable mass in the upper abdomen. Not infrequently an undiagnosed pseudocyst is discovered as an incidental finding at the time of cholecystectomy. There are four forms of treatment available to the surgeon in the treatment of pseudocysts. These are excision, marsupialization, simple drainage, and anastomosis of the cyst to the stomach or other portion of the gastrointestinal tract. In the last several years there has been considerable interest in the anastomosis of such cysts to the gastrointestinal tract because of a desire to get away from the somewhat prolonged period of drainage when marsupialization or simple drainage is used. The technique of anastomosis is simple and the result usually satisfactory; however, marsupialization of a pseudocyst may be preferable when possible. Marsupialization consists of suturing the mouth of the opened pseudocyst to the parietal peritoneum and skin leaving a stoma 2 or more centimeters in diameter. Suturing the opening of the cyst to the parietal peritoneum as well as the skin gives quite good assurance against the formation of a ventral hernia. When the pseudocyst is too small to reach the abdominal wall, a mushroom catheter may be sutured into the cyst and carried out through the abdominal wall. The catheter used for this purpose should be of large caliber. The objection to anastomosing the cyst to the gastrointestinal tract is that it produces an abnormality of the gastrointestinal tract which is unnecessary in the majority of cases. The majority of pseudocysts do not drain pancreatic juice over a long period of time if they are adequately drained, and likewise do not form recurrent cysts if adequately drained. In the occasional case where a persistent draining sinus results, this sinus can then be transplanted from the skin to the gastrointestinal tract — usually the jejunum is preferable to the stomach. Attempts to stop the drainage from a pancreaocutaneous sinus by the use of silver nitrate, sodium morrhuate, x-ray irradiation, radium, etc., are quite useless.

Pseudocysts can seldom, if ever, be excised as the wall of the cyst consists of the abdominal structures such as colon and stomach. Retention

cysts can often be excised but there is the problem of continued drainage of pancreatic juice from the site of excision. If such a cyst is located in or near the tail of the pancreas, resection of the distal portion of the pancreas is the most suitable form of treatment. For retention cysts at or near the head of the pancreas, anastomosis to the gastrointestinal tract would be in order if active flow of pancreatic juice could be demonstrated at the time of surgery. If flow of pancreatic juice is not demonstrated, one should carry out marsupialization or catheter drainage if marsupialization is not possible, and anastomose only the occasional persistent draining sinus to the gastrointestinal tract. Neoplastic cysts, of course, should be resected if possible. Marsupialization or drainage of a cystadenoma results in a permanently draining sinus. A cystadenocarcinoma should be excised widely for obvious reasons, and, if necessary, total pancreatectomy would be justifiable. A cystadenocarcinoma would be identified by projection of malignant tissue into the cyst.

ISLET CELL ADENOMATA OF THE PANCREAS

The significant islet cell tumors of the pancreas produce insulin and the resulting hyperinsulinism produces the symptomatology and signs which are exactly the same as a diabetic's insulin reaction. The diagnosis, however, is frequently overlooked, and many patients with islet cell adenomata have come to surgery through the neuropsychiatric service where they had been admitted with a diagnosis of epilepsy. The only treatment of islet cell adenomata is surgical removal of the adenomata. However, before surgical exploration is justified, certain criteria must be established. Other possible causes of hypoglycemia, such as liver disease, pituitary disease, thyroid disease, central nervous system disease, and adrenal disease, must be ruled out. Symptoms must be rather severe and symptoms must be present in spite of dietary regulation. This dietary regulation consists of a diet high in protein and fat but very low in carbohydrate. There must be repeated fasting blood sugar determinations below 50 mg. per 100 cc. of blood. Self-administration of insulin must be ruled out. Priestley has had experience with malingerers who have used insulin. The glucose tolerance test adds no information to that obtained by fasting blood sugar determinations. Adrenalin and ACTH will control the hypoglycemia but these cannot be administered for any lengthy period of time. Alloxan apparently destroys normal islet cells but does not destroy the cells of the adenomata. Intravenous glucose is ordinarily given before, during, and after surgery. After surgical removal of adenomata there is usually a period of hyperglycemia lasting several days.

Most islet cell adenomata are benign. About 10 per cent of the cases have multiple adenomata. Adenomata have been reported in aberrant pancreatic tissue. An adenoma as small as 2.5 mm. in diameter has been reported by Priestley to cause rather severe hypoglycemia. This small size makes location within the pancreas difficult or impossible in certain cases. Usually, however, an adenoma can be found and removed by enucleation. An adenoma is more firm and darker in color than the remainder of the gland. If an adenoma is found deep in the substance of the tail of the pancreas, it is more satisfactory to resect the tail of the pancreas than to enucleate the tumor. When no adenoma can be found, resection of two-thirds of the gland is indicated. The entire gland, however, must be mobilized during the surgical procedure as about 20 per cent of the adenomata will be found in the head of the pancreas, and in 10 per cent of the cases there will be multiple adenomata. As many as seven adenomata have been found in one pancreas. When a large portion of the pancreas has been resected in the absence of ability to locate an adenoma, an adenoma can sometimes be found in the surgical specimen by the pathologist. If the pathologist finds an adenoma, the prognosis is good; otherwise, the patient is likely to continue to have hypoglycemia. A search for ectopic pancreatic tissue should be carried out if no adenoma is found. If removal of two-thirds of the gland has not resulted in relief of symptoms, additional resection should be carried out. Total pancreatectomy, however, is not recommended for reasons stated elsewhere.

Occasionally an extensive neoplastic process is found with the islet cell tumor being malignant. The malignant tumor does not always produce insulin but when it does, very radical surgery is justified, even though the ultimate outlook is hopeless, because of the uncontrollable hypoglycemic state accompanying such a tumor.

CARCINOMA OF THE PANCREAS AND AMPULLA OF VATER

The treatment of carcinoma of the pancreas

is very discouraging. In spite of the poor prognosis, however, patients with suspected carcinoma of the pancreas should not be denied the chance of early exploration when a carcinoma might be cured. The experience in the past few years has shown that the Whipple operation (pancreatoduodenectomy) should be carried out only in very early or small carcinoma of the head of the pancreas or carcinoma of the ampulla of Vater. In more advanced carcinoma of the head of the pancreas the course of the disease is not altered by this or other surgical procedure. Carcinoma of the body and tail of the pancreas which would be more easily resected is unfortunately seldom, if ever, diagnosed before there are widespread metastases or extension into vital structures.

Carcinoma of the ampulla of Vater is frequently papillary and located within the ampulla and not visible until the ampulla is opened, but it is palpable as a spherical submucosal nodule, or the area of the duodenal papilla may feel elongated and firm. This carcinoma is not diagnosed and does not come to surgery unless it obstructs the common bile duct. At the time of surgery the pancreatic duct is also obstructed in only about 25 per cent of the cases. Because of the jaundice or pruritus with this lesion diagnosis is made early when cure is possible; so the Whipple resection is definitely indicated for carcinoma of the ampulla of Vater.

Preoperative preparation must include return of the prothrombin time to normal or near normal by the use of vitamin K, as well as improvement of the nutritional state and the use of blood transfusions.

In carcinoma of the head of the pancreas, biopsy of the pancreas at the time of surgery is very often not satisfactory. Usually only chronic pancreatitis can be demonstrated in spite of the underlying carcinoma; so it is usually necessary to resect without positive evidence of carcinoma. The surgeon however needs something more than suspicion to go on. Cattell has pointed out that a surgeon should not proceed with a radical pancreatoduodenectomy unless there is dilatation of either the pancreatic duct or the biliary tract. The site of biopsy of the pancreas has not infrequently resulted in a fistula which drains pancreatic juice. This undesirable situation can usually be prevented b avoiding the anterior surface of the gland — the location of the main pancreatic duct, and by suturing across the biopsy site with a nonabsorbable suture. The problem of getting a positive biopsy from a carcinoma of the head of the pancreas has led to the use of the Silverman needle in order to get a deeper biopsy. This method, however, is reported to result in draining fistulae too frequently to warrant its use. A deep biopsy of the head of the pancreas may be taken through the opened second portion of the duodenum. A resulting fistula would then drain into the duodenum, eliminating the hazard of a fistula. There, however, is some hazard of unobserved bleeding and/or acute pancreatitis. This hazard seems preferable to that of performing a radical pancreatoduodenectomy in a patient who may not have a carcinoma of the head of the pancreas. A Whipple resection consists of a block resection of the pylorus, duodenum, lower end of the common duct, and head of the pancreas, with reanastomosis of the stomach, pancreas and common duct, preferably in that order, to the first part of the jejunum.

Palliative anastomosis of the gall bladder or common duct to the gastrointestinal tract relieves jaundice and itching, but nutrition and duration of life are not improved by this palliative procedure. Cattell has recommended anastomosis of the dilated pancreatic duct, which is readily obtainable on the anterior surface of the gland, to the jejunum in addition to the anastomosis of the biliary system to the gastrontestinal tract. This is thought to improve the nutritional state and perhaps the duration of life. Splanchnicectomy or alcohol injections about the splanchnic nerves have been suggested as a means of controlling pain, but the life expectancy is only a few months once the diagnosis of inoperable carcinoma of the pancreas is made.

A two-stage pancreatoduodenectomy is possible and should be carried out if the patient is a poor risk, if the operative conditions are not satisfactory, or if the surgean is not sufficiently experienced. The two-stage procedure, however, in no way reduces the extensiveness of the second stage. The first stage consists of a cholecystojejunostomy at a point about 18 inches from the ligament of Treitz.

BENIGN TUMORS OF THE AMPULLA OF VATER

Benign tumors of the ampulla of Vater are even less common than carcinoma of this structure. The majority of these benign lesions are adenomata or papillomata. Good results are

obtained from local excision of the tumor with reanastomosis of the common bile duct and pancreatic duct to the duodenal mucosa. Every lesion of the ampulla of Vater should be examined by frozen section and the surgery limited to a local excision of the lesion unless it is proven to be carcinoma. The lesion is approached through a longitudinal opening in the second portion of the duodenum which later is closed transversely.

SOME FACTORS AFFECTING THE RADIO-THERAPEUTIC APPROACH TO CARCINOMA OF THE CERVIX

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THE rationale of radiation treatment in carcinoma of the cervix is to deliver a cancericidal dosage to the tumor without permanently harming the normal tissue. This sounds like a very simple situation but there are at least three main shortcomings in trying to apply this rationale.

First of all, in any particular case, the cancericidal dose is not accurately known. It may require anywhere from 4,500 to 10,000 roentgens (treatment time not stated) for tumor control(1). The difference in radiosensitivity at first was thought due to differences in cell structure, so attempts were made to correlate dosage with the histology of the tumor. But given two different cases, tumors with the *identical microscopic* appearance would respond *differently* to the same roentgen dosage. Contrarywise, tumors with *different* microscopic appearance might respond similarly to the same roentgen treatment.

This variation in tumor response to radiation may be due in part to biological dissimilarities, but also is affected by another unpredictable factor known as the "host reaction". That is, there is something in the way the body's defenses react to both the radiation and the tumor that is necessary for tumor control.

If one could push safely to the larger cancericidal dosage, more tumors would be sterilized. Our only limiting factor preventing this is the tolerance of normal tissue. Here again we have variables, however. The tolerance of normal tissue to irradiation varies from person to person. It varies with the volume of tissue irradiated, larger volumes standing less irradiation. It varies also with the type of radiation and the rate of application.

The third difficulty, in addition to the variation in cancericidal dosage, and in normal tissue tolerance, is that the exact location and extent of the carcinoma is not known.

Several statistical and morphological factors help clarify the extent of the disease, however Table 1). (See Page 371).

Microscopic studies of clinical staging shows that clinical staging, our best method of categorizing at present, frequently differs from the real extent of the tumor(1, 2, 3).

Thus approximately 20% of League of Nations Stage 1 on microscopic examination are really much more extensive due to pelvic lymph node involvement, and an even greater number of Stage 1 have parametrial involvement. There are even a few per cent of clinical Stage 1 that have unrecognized extra-pelvic metastases.

Clinical Stages II and III also also are more advanced than physical examination or x-ray studies tell us in about *half* of the cases. The converse also frequently occurs, that is, the tumor is less extensive on pathologic examination compared with physical examination, induration, or masses being inflammatory in origin.

In trying to determine which tumors in any *one* particular clinical stage will metastasize more readily than any other tumor in the same clinical stage, generalizations can be made.

Thus the gross *appearance* of the carcinoma may give a clue to its extent. Exophytic tumors, clinical Stage I, for instance, produce lymph node carcinoma one-third as often as a similar stage infiltrating carcinoma(1).

Microscopic appearance is also a help since well differentiated Grade I squamous cell carcinoma metastasizes to lymph nodes much less often than undifferentiated Grade III, perhaps half as frequently(5).

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The gross *extent* of the tumor in any one stage may be another prognostic factor. If less than one-third of the thickness of the cervix is involved in Clinical Stage I the chances of lymph node metastases are extremely rare, whereas lymph node metastases may rise to 20% if greater than *half* the thickness of the cervix is involved.

The nodes that are involved most frequently are the lymph nodes at the lateral pelvic wall with the hypogastric nodes (just under the sacroiliac joint) and the obturator node (at the entrance to the obturator foramen) next most often involved. Nodes in the parametrium are also frequently involved.

Knowing the above factors which affect the extent of the tumor, and having an approximate idea of a cancericidal dose and normal tissue tolerance I would treat a carcinoma of the cervix by attempting to deliver adequate irradiation to the known and suspected tumor areas. This would vary with each individual case.

First, however, we should decide on the necessity of external roentgen irradiation. When should a patient receive external irradiation and when should he not?

I feel that well differentiated small lesions League of Nations Stage I do not warrant heavy, or perhaps any external x-ray. The same can be said for Stage I exophytic small lesions. In other early League of Nations Stage I, I would give external x-ray but not of the amount to give a high risk of radiation complications.

However, in League of Nations Clinical Stage II, the chance of more lateral extension of the disease to the pelvic wall is high, approximately 40%, by virtue of parametrial or lymph node involvement, and therefore, higher dosage should be risked.

Clinical Stage III of course *demands* external radiation and assumes more importance relative to the radium than in earlier stages.

If only radium is used, a minimum dose of 6,000 roentgens in seven days to a 4 cm. in diameter sphere should be given since few cases are controlled with smaller doses(4).

Preliminary x-ray, that is, x-ray treatment before the radium treatment, might be used in septic cases, and cases where good radium placement cannot be made because of bulky tumor. After the tumor is decreased in size by external radiation, better radium placement may be possible. Preliminary x-ray is also useful to control hemorrhage.

As I intimated previously radium *only* is best suited for early well differentiated or exophytic Stage I.

Radium plus more extensive x-ray on the tumor-affected side of the pelvis might be used in unilateral Stage II's, since less than 10% have recurrence on the opposite side and perhaps in unilateral Stage III where the general condition of the patient would not permit adequate treatment of the entire pelvis, or where there has been inadequate radium application to the affected side.

It must be remembered that intracavitary radium alone, no matter whose system of application is used, rarely irradiates effectively outside of a 5 or 6 cm. diameter sphere.

Using a therapeutic approach based essentially on the above data, we have suggestive evidence that we may be improving our results in the radiation treatment of carcinoma of the cervix (Table II). The table seems to indicate that our results might be improving since 1948 when treatment was individualized and patients were irradiated somewhat more intensively. The figures represent clinic patients only who were mainly treated by the resident staffs of the Departments of Obstetrics and Gynecology and Radiology. There was no essential difference in the percentage of early or advanced stages between the 1940-1947 group as against the group treated in 1948(6).

The number of cases treated is relatively small and the follow-up in many of the cases is relatively short and final evaluation is yet to be performed.

TABLE I

*Clinical Stages — Carcinoma of the Cervix**

O	Preinvasive carcinoma
I	Carcinoma confined to the cervix
II	Spread into parametrium, but not to pelvic wall; involvement of upper two-thirds of vagina
III	Spread to pelvic wall on one or both sides; lower one-third of vagina
IV	Bladder, rectal, or distal spread

(When in doubt choose earlier stage)

*Abbreviated from League of Nations classification.

TABLE II

Stanford Results — Carcinoma of the Cervix***

Year Treated	No. Treated	Lost	% Five-Year Survival	Treated Elsewhere
1940-1947	193	2	40.0	
1948	19	0	77.5	12
1949	26	0	57.5 (4 yrs.)	7
1950	21	0	71.0 (3 yr.s)	4
1951	31	0	58.0 (2 yrs.)	2
1952	23	0	78.0 (1 yr.)	3
1953	30	0	———	9

*Compiled by Dr. Charles McLennan, Professor of Obstetrics and Gynecology, Stanford University School of Medicine.
**Stage 0 not included.

SUMMARY

1. There is great variation in normal tissue tolerance to irradiation dependent on many variables such as the volume of tissue irradiated and the type and rate of radiation;

2. There is great variation in the clinical staging of carcinoma of the cervix with the actual microscopic findings. Tumor can actually be more or less extensive than the clinical findings. The extent of the tumor also seems to vary *within any one League of Nations staging* depending on gross and microscopic morphology.

3. Intracavitary radium *alone* cannot adequately irradiate a sphere of cancer containing tissue greater than 5 or 6 cm. in diameter without injuring the normal tissue.

4. The radiation treatment of carcinoma of the cervix *should be individualized* with the aim of delivering adequate radiation to known and probable tumor-bearing areas taking into account the above mentioned variables.

REFERENCES

1. Taylor, A. G. C.: Supplementary X-ray Treatment for Carcinoma of the Cervix Uteri in Relation to the Direction of the Spread of the Disease. Brit. J. Radiology 13:293-313, 1940.
2. Cantril, S.: Radiation Therapy in the Management of Cancer of the Uterine Cervix. Springfield, Illinois, Charles C. Thomas, Publisher, 1950.
3. Sandler, B.: An Investigation into the Dosage Delivered by Certain Techniques in the Radiation Therapy of Carcinoma Cervix. Brit. J. Radiology. 11:623-636, 1938.
4. Tod, M.: The Optimum Dosage in the Treatment of Carcinoma of the Uterine Cervix by Radiation. Brit. J. Radiology. 14:23-29, 1941.
5. Warren, S.: Studies on Tumor Metastasis: Distribution of Metastases in Carcinoma Cervix Uteri. Surg., Gynec., & Obst. 56:742-745, 1933.
6. McLennan, Charles: Personal communication.

PHOENIX *Clinical* CLUB

The Case History in this discussion is selected from the Case Records of the Massachusetts General Hospital, and reprinted from the New England Journal of Medicine. The discussant under Differential Diagnosis is a member of the staff of the Massachusetts General Hospital. The other discussants are members of the Phoenix Clinical Club.

MASSACHUSETTS GENERAL HOSPITAL
PRESENTATION OF CASE

A fifty-seven-year-old man was admitted to the hospital because of confusion and weakness.

The patient was well, active and alert until approximately three and a half months prior to admission, when he began to complain of moderately severe, constant, left midthoracic and paraspinal pain that radiated up and down the spine and was increased by local pressure, motion and prolonged sitting. Three months before admission generalized weakness and nervousness and moderate occipital and neck pain, with slight tenderness in this region, developed. About one and a half months prior to entry when the patient was in another hospital for a short time, allegedly he was told that he had bronchial asthma and that x-ray films of the spine showed "arthritis" and that those of the stomach were normal. His general health failed gradually; he had increasing asthenia, anorexia, nervousness and aches in his neck and back, and became confused and irritable. Three weeks before entry an ache in the lower back that radiated into both hips and legs developed. Examination at another hospital one week prior to admission revealed generalized weakness, bloody spinal fluid, stiff neck, absent reflexes and weakness in the legs. The confusion and irritability gradually became more severe.

There was no history of injury, localized headache, unconsciousness, convulsions, chills, fever, visual disturbances, cough hemoptysis, dyspnea or gastrointestinal or urinary symptoms. He had lost 25 pounds in weight in the three and a half months prior to entry.

Physical examination disclosed a dehydrated, agitated, over-active man, who appeared chronically ill and complained of neck pain. The mucous membrane of the mouth was red, dry and crusted and the tongue was black. The

neck veins were flat. The heart size was within normal limits; there was a Grade I apical systolic murmur. The abdomen was soft, and there were no palpable organs or masses. The prostate was slightly enlarged but was not hard or nodular. There was marked nuchal rigidity, with marked pain on attempted flexion and tenderness on palpation of spinous processes in the neck and lumbar region. The patient followed most commands well but could only speak a few incoherent words in a simple way. The pupils were equal and regular and reacted to light and on accommodation. The optic discs were blurred bilaterally; there were no hemorrhages or exudates. There was a suggestion of weakness of both lower facial nerves. In response to the command to close his eyes, the eyes would roll upward; he was able to follow objects without any apparent difficulty. The corneal reflex was absent. The gag reflex was present. His hands were tremulous and moved in a random twitching manner. The strength in the arms appeared slightly diminished, and the deep tendon reflexes were present and equal. He was unable to perform adequatly the finger-to-nose test. The abdominal reflexes were present. There was a suggestion of weakness of the right leg, although he was able to move both legs. There were absent reflexes in the lower extremities, and the plantar reflexes were flxor. Hhe claimed to feel vibrations and seemed to be able to note position correctly. Examination of the sensory system was unsatisfactory.

The urine gave a one plus reaction for albumin. Examination of the blood revealed a hemoglobin of 15 gm. and a white-cell count of 9800, with 80 per cent neutrophils. The nonprotein nitrogen was 32 mg., the bilirubin 0.3 mg. direct and 0.7 mg. total and the protein 5.30 gm. per 100 cc., with an albumin-globulin ratio of 1.9; the serum sodium was 152.2 milliequiv., the chloride 116 milliequiv., the potassium 3.8 milliequiv., and the carbon dioxide 26.5 milliequiv. per liter. Lumbar puncture revealed clear, yellow spinal fluid under an initial pressure equivalent to 250 mm. of water; the fluid contained 500 mg. per 100 cc. of protein, 10 mg. per 100 cc. of sugar and 126 milliequiv. per liter of chloride and 145 red cells and 52 white cells (almost all mononuclear cells) per cubic millimeter. The colloidalgold curve was 0001112222, and the spinal-fluid and blood Hinton tests were negative. A smear of the spinal fluid showed no organisms or acid-fast bacilli, and a culture yielded no growth. Roentgenograms of the chest demonstrated a homogeneous density in the right first inter-space lying somewhat posteriorly, and narrowing of the trachea just above the clavicle.

The patient was placed on fluids parenterally, streptomycin and PAS (para-aninosalycylic acid). There was little change in his condition, and the temperature remained elevated, varying between 101 and 103° F. On the sixth hospital day a lumbar puncture showed an initial spinal-fluid pressure equivalent to 600 mm. of water; the fluid was slightly xanthochromic and contained 110 cells per cubic millimeter, of which 28 were red cells and the rest large granular cells. The fluid contained 166 mg. per 1000 cc. of protein, 28 mg. per 100 cc. of sugar and 106 milliequiv. per liter of chloride. The patient remained confused and semicomatose and refused oral feedings and medication. He gradually became comatose, and opisthotonos developed; there was no other definite change in the physical findings. He died on the fourteenth day.

DR. ROBERT S. FLINN

"The Saga of the Cigarette Fiend or What Five Leading Brands did to Percival Pimpstick"

Percival Pimpstick, age 55, entered the Massachusetts General Hospital complaining of pain in the back, weakness, loss of weight, etc. and died fourteen days later from primary carcinoma of the lung with metastasis to the central nervous system. As they say on the radio programs "let us turn the clock back and look in on our hero some years prior to his admission to the hospital."

Percy was an average American boy in an average American home whose surroundings and home life were not remarkable except in one respect – he was treated with pathological solicitude by both his father and his doting mother and many of the facts of life were denied him. His father, a benign, obese, emphysematous and mildly asthmatic physician, was too busy switching from one leading brand of cigarettes to the other to have time to tell our hero of the harmful effects of cigarete smoking. For example, he was not told that smoking is one of the most prominent sources of bronchial irritation, that all chronic cigarette smokers suffer from a chronic bronchitis and that no individual with bronchitis should irritate his inflamed mucus membrance

with smoke any more than a patient with conjunctivities should blow smoke in his eyes. He was not warned that high-pressure salesmanship was being exerted upon the public to encourage smoking. Or how the fact that tobacco companies advertise how much less irritating their own brand of cigarettes are than some of their competitors product is a tacit admission that cigarette smoking is a bronchial irritation. Moreover Percy's father was so engrossed in testing cigarettes with built-in filters or those treated with menthol and various other medicaments that there was no time left for him to peruse the medical literature and to learn of the close relationship between heavy smoking and lung cancer. For example he was not aware that Winder and Cornfield made a survey of doctors who died of carcinoma in the years 1950 and 51 and found that the mortality rate from cancer of the lungs was 10 per 100,000 among non-smoking physicians and 133 per 100,000 among physicians smoking 35 or more cigarettes a day. However, in defense of the father, it must be pointed out that aside from this slight deficiency in education, the boy was given every opportunity. He was sent to a fashionable preparatory school, a mediocre but snobbish college and wound up as a very successful broker, the head of his own firm, at the age of 35. He led an exemplary life. He neither drank, smoked, played the horses or associated with socially-inferior persons. Civic and business honors were heaped upon him all of which he accepted with great modesty and equinimity. Then, one fateful day, he was approached by an advertising agency to pose as the man of distinction, complete with Brooks Brothers tweed coat, his paneled library as a background holding a cigarette and exclaiming — "they satisfy." The cigarette was placed in his hand in the conventional manner by an agency employee, a match was struck and the nostrils of our hero were assailed by a delightful aroma of a secret mixture of the cream of the crop of mild Virginia, semi-mild burley and aromatic latakia, the latter from the sun-drenched hills of far-off Asia Minor. Still sceptical, he took a puff, then another, then another, then another and when the clear, cool, soothing smoke, (the irritating product having been removed by secret process), filled his bronchial tree, he knew at last what real contentment meant. From that moment, the fate of our hero was sealed. He became a cigarette fiend; not only did he smoke cigarettes continuously while sitting at his office desk but he was seen frequently to be carrying a lighted cigarette while walking down the street or while driving his motor car. His entire life revolved around cigarette smoking. He shunned churches, operating rooms, filling stations and court rooms where smoking is not permitted and spent his time in saloons, drawing rooms, brothels and other places where cigarette smoking is not frowned upon. Then he began complaining of pain in his chest, weakness and nervousness and neck pain. One doctor guessed that he had asthma; another guessed that he had arthritis. The confusion on the part of his physicians aggravated the patient's own confusion and irritability and, according to the protocal, he gradually became worse. When he entered the hospital, he had stiffness of his neck, mental confusion and lack of muscular coordination. When the lumbar puncture was done showing a clear fluid without organisms, one physician guessed that he had tuberculous meningitis in spite of the fact that the blood chlorides were normal, if not slightly elevated, a condition, according to some authorities, which is never seen in tuberculous meningitis. Another physician guessed that he might have encephalitis in spite of the fact that in encephalitis the sugar content of spinal fluid is usually elevated rather than lowered. Another physician guessed that he might have a fungus infection such as torula. Someone else guessed that he might have a hypernephroma with cerebral and pulmonary metastasis.

But in spite of the streptomycin and para-aminosalicylic acid, the patient went quietly to his death on the 14th day never really knowing which of the five leading brands contained the highest percentage of packed-in goodness. At post mortem examination the pathologist found a primary carcinoma of the lung with extensive metastasis to the central nervous system.

DIFFERENTIAL DIAGNOSIS

Dr. Gardner Quarton: May I see the x-ray films?

Dr. Stanley M. Wmayn: A quite homogeneous, rather irregular density is present in the right-upper-lung field, probably in the posterior portion of the lung. The trachea on the right is indented probably by some intrinsic pressure on its right aspect just above the clavicle. Otherwise, I do not see anything abnormal.

Dr. Quarton: This patient obviously had

disease in at least two places; in the central nervous system, certainly in the meninges, and in the chest. The course of the illness, with the insidious onset and gradual increase in symptoms, suggests either neoplasm or infectious disease that began gradually and proceeded to death, which was apparently almost inevitable.

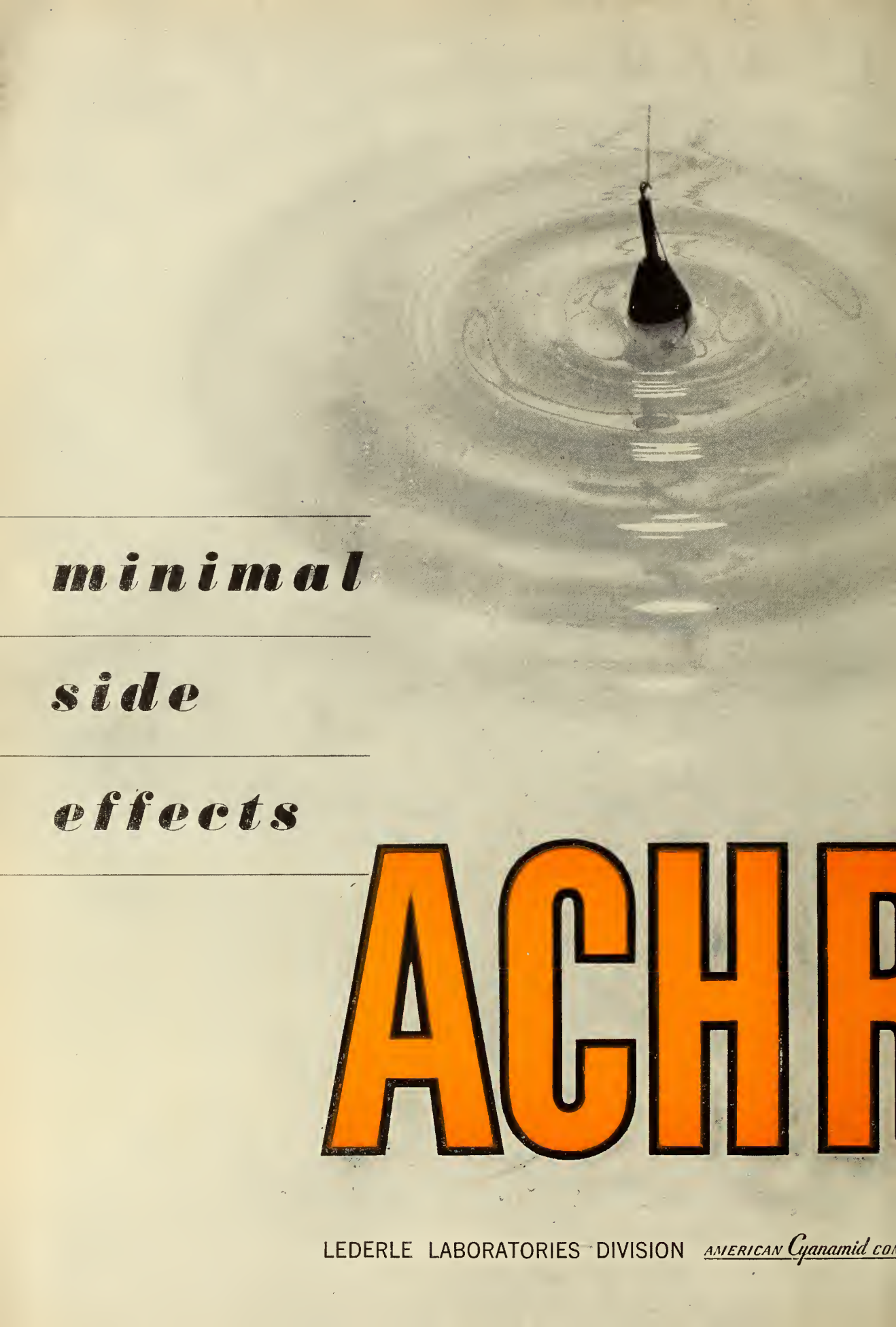
He had a great many findings and symptoms, some of which may be important and many of which are really difficult to interpret. The pain in the left midthoracic region, since the finding in the chest was on the right, I should suppose was not due to the condition in the chest but was referred pain. It is interesting that he was told that he had bronchial asthma. One wonders whether the findings in the chest were responsible for the symptoms that led to that diagnosis. The pain in the lower back, I do not believe can be explained at this point. The bloody spinal fluid that was found in the other hospital is difficult to interpret and may have been due to a traumatic tap. It would be helpful to know what the findings were in that spinal fluid. I think the negative statements are also interesting; he had no chills or fever, cough or hemoptysis. The 25-pound weight loss is consistent with a progressive neoplastic disease or illness of infectious type. Physical examination revealed definite signs of meningeal irritation — nuchal rigidity and tenderness on palpation in the neck and in the lumber region. There was some evidence of increased intracranial pressure: the optic discs were blurred, and the cerebrospinal-fluid pressure was elevated, but not extremely elevated.

There seems to have been no convincing evidence for involvement of the long tracts of the nervous system that would help me in localization of parenchymal disease. The incoherence of speech, the disturbance in behavior and the gradually disorientation suggest some generalized process, probably involving the cortex; they could equally well have been due to tumor within the brain. The weakness of both lower facial nerves was merely questionable. There was nothing else to suggest trouble with the upper motor neurons, so that I am going to disregard that. The rolling of the eyes upward is physiologic but is often seen in patients with peripheral seventh-nerse lesions; yet there were no other signs of seventh-nerve involvement. I shall assume that there was some seventh-nerve weakness but that it was not really conclusive. The corneal reflex was absent there was no other evidence of fifth-nerve difficulty. The other superficial reflexes — the gag reflex and the abdominal reflexes — were present. The absence of the corneal reflexes may have been due to the general disturbance in consciousness. The disappearance of strength in the arms and to some extent the weakness of the legs suggest involvement of the motor system, but there was no definite evidence of a paralysis. The difficulty in performing the finger-to-nose test could have been due to a general lack of co-operation. On the other hand all those findings could have been due to trouble within the brain or within the cerebellum. The fact that the reflexes were present in the upper and absent in the lower extremities suggests some kind of disease in the nerve roots to the lower extremities. The fact that the planter reflexes were flexor, however, suggests that the long tracts of the spinal cord were not significantly involved. So does the apparent ability to note position and vibration.

The laboratory findings are interesting. The hemoglobin was normal, and the white-cell count was not suggestive of an acute infectious disease. The nonprotein nitrogen was within normal limits, the bilirubin not very abnormal, the total protein somewhat low, the sodium and chloride slightly high, and the carbon dioxide normal. The patient was not seriously dehydrated, although his tongue was dry. The most interesting and most important laboratory findings were the spinal-fluid findings. The cerebrospinal-fluid pressure was definitely increased, the protein high (500 mg. per 100 cc.), the sugar unusually low, and the chloride high but consistent with the serum chloride; the fluid contained abnormal cells, chiefly mononuclear cells. Those findings indicate a meningeal reaction, and the problem is a differential diagnosis among certain types of meningitis.

One should consider and discard syphilitic infection. The Hinton test was negative, and the colloidal-gold test was not consistent with syphilis. Tuberculous meningitis is a strong possibility. I am not clear enough about the signs in the chest to say whether they were consistent with tuberculosis. Both the clinical course and the diffuse pain could be explained by a chronic meningitis process of the tuberculous type.

I also have to consider very strongly yeast



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side

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meningitis. I forgot to mention the black tongue — the patient could have had yeast on the tongue. In the meninges, torula would be the most likely candidate and could also account for a granulomatous process in the lung and the mass pressing on the trachea. I shall not mention the other rather rare yeasts and molds because I do not know of any way of making a differential diagnosis.

Weil's disease occasionally produces a lymphocytic meningitis, sometimes without jaundice, but I think it is very unlikely in this case. Tumors within the nervous system, involving the meninges, sometimes produce a picture simulating meningitis, — ependymomas metastatic to the meninges, — but as a rule the history and clinical picture are quite different; furthermore, there was evidence of disease outside the nervous system so I do not have to consider that.

So-called tumor meningitis — sarcomatosis, tumor arising from the cells of the meninges and spreading widely throughout the spinal fluid is a possibility. This can produce a high spinal-fluid protein. I am not sure what the sugar would be. I suppose plycolysis could occur, but I suspect that the low sugar favors a meningitis. Again the evidence of disease outside the nervous system makes that unlikely. There are tumors that metastasize to the meninges — carcinomas, sarcoma and lymphomas; they could explain the disease in the chest. I am not sure whether they could produce the low sugar. There were no localizing signs to indicate another site in the body for tumor.

My diagnosis is torula meningitis, with the granulomatous lesions on the same basis as the meningitis; however, I do not think I can distinguish between a yeast meningitis and a tuberculous meningitis on clinical grounds.

Dr. Thomas Paine: When I saw this patient on the ward, I believed the history suggested a slowly developing meningitis. The signs of disease in the right-upper-lung field and the lymphocytes and the low sugar in the spinal fluid obligated us to treat him as though he had tuberculous meningitis; that is why he was put on streptomycin and PAS. Another possibility that was considered was tumor in the right-upper-lung field, with secondary infection, both of which had metastasized to the central nervous system.

Dr. Robert E. Schwab: I favored tuberculous meningitis, but I considered the other forms of meningeal reaction and carcinomatosis. We considered torula, but the cultures were negative and so we eliminated that. As I remember, we planted it on ordinary media, in which the organisms will grow out late and on Sabouranud's medium; both cultures were negative.

Dr. John B. Stanbury: I am surprised that the mass in the trachea was not felt.

Dr. Wyman: It is not very large; it is quite low and close to the clavicle. It would be difficult to palpate.

CLINICAL DIAGNOSIS

Tuberculous meningitis.

Tuberculosis of lung.

DR. QUARTON'S DIAGNOSIS

Torula meningitis.

Torula infection of lung.

ANATOMICAL DIAGNOSIS

Adenocarcinoma of lung, with metastases to meninges.

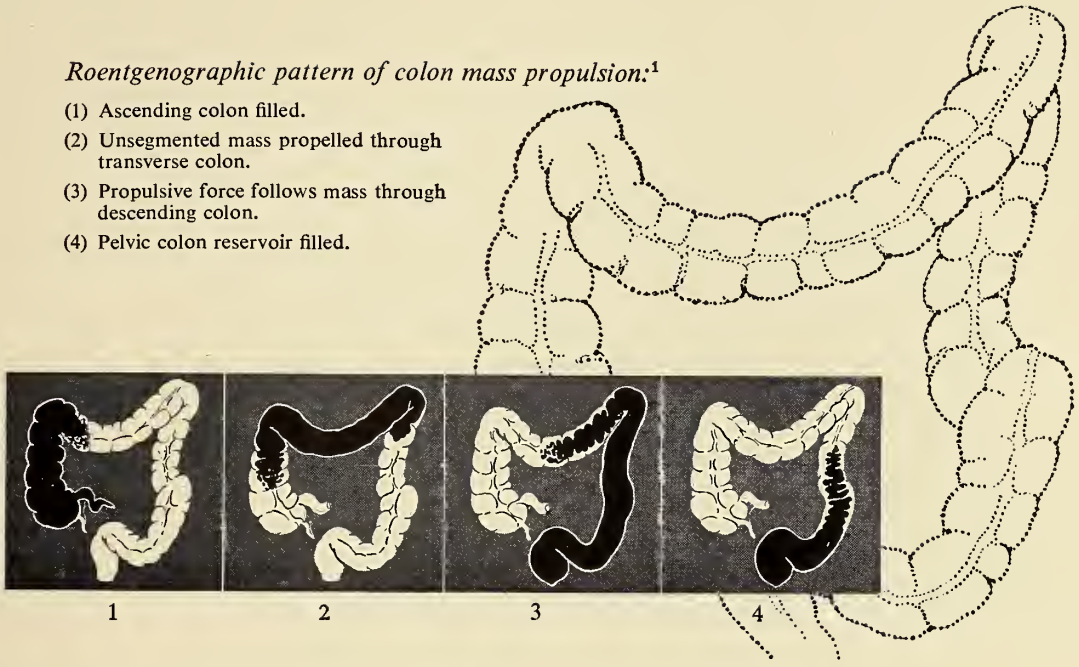
PATHOLOGICAL DISCUSSION

Dr. Benjamin Castleman: Autopsy showed a primary adenocarcinoma in the superior bronchus of the right upper lobe that had metastasized to the regional lymph nodes in the hilar area; one large lymph node accounted for the x-ray picture of tracheal indentation. There was also a metastasis on the pleura and in one of the adrenal glands. If some of the spinal fluid had been sent to the cytology laboratory, tumor cells might have been picked up, because, as Dr. Richardson will describe, there was involvement of the meninges.

Dr. Raymond D. Adams: I believe Miss Eulalia Grzebieniowska saw them in the spinal fluid.

Dr. Edward P. Richardson, Jr.: At autopsy we found diffuse carcinomatosis of the meninges generally. It appeared as a diffuse thickening of the pia arachnoid to the extent that the normal landmarks of the spinal cord, base of the brain, cerebellum and sulci of the convegities of the cerebral hemispheres were somewhat obscured.

Microscopical examination showed large numbers of typical carcinoma cells presenting as cluster, small clumps and gland-like structures, indicating that this was an adenocarcinoma. The most severe involvement was in the meninges overlying the cerebellum, where tumor cells accompanied the vascular adventitia into the substance of the cerebellum and formed a few small clusters of cells within the cerebellar



Roentgenographic pattern of colon mass propulsion.[1]

(1) Ascending colon filled.
(2) Unsegmented mass propelled through transverse colon.
(3) Propulsive force follows mass through descending colon.
(4) Pelvic colon reservoir filled.

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Factors Contributing to Chronic Constipation

Such gentle stimulation is of distinct advantage in reeducating and reestablishing those reflexes which control bowel evacuation. Many factors may pervert the normal reflexes, causing finally chronic constipation. Among them are: nervous fatigue and tension, improper intake of fluid, improper dietary habits, failure to respond to the call to stool, lack of physical exercise and abuse of the intestinal tract through excessive use of laxatives.[2]

Correction of constipation logically, therefore, lies in the suitable adjustment of these factors. The characteristics of Metamucil permit the correction of most of these factors: it provides bulk; it demands adequate intake of fluids (one glass with Metamucil powder, one glass after each dose); it increases the physiologic demand to evacuate; and it does not establish a laxative "habit." Metamucil, in addition, is inert, and also nonirritating and nonallergenic.

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1. Best, C. H., and Taylor, N. B.: The Physiological Basis of Medical Practice: A Text in Applied Physiology, ed. 5, Baltimore, The Williams & Wilkins Company, 1950, pp. 579-583.

2. Bargen, J. A.: A Method of Improving Function of the Bowel, Gastroenterology *13*:275 (Oct.) 1949.

cortex. Otherwise, there was no parenchymal involvement of the central nervous system.

Dr. Charles S. Kubik: Was the seventh nerve affected?

Dr. Richardson: The nerve roots generally were infiltrated by adenocarcinoma.

Dr. Schwab: A number of such cases were reported at the spring meeting of the American Neurological Association. In a large percentage of those cases the sugar was at the level noted in the case under discussion.

Dr. Adams: We have observed several cases of carcinomatosis of the meninges like this one, in which the cerebrospinal-fluid sugar was too low to read. The three possible explanations of a subacute meningitis with low sugar are torula or some other fungus, tuberculosis and carcinomatosis. This patient's clinical course was unusually long for tuberculosis.

Dr. Quarton: How often do you find the organisms of torula in the spinal fluid?

Dr. Adams: Usually, they can be easily identified in a smear of the spinal fluid; sometimes, the fluid contains huge numbers of organisms. In 1 case we could not find them in repeated smears or isolate them by repeated culture, and yet at autopsy they could be seen in small numbers in the meningeal exudate.

Dr. Robert L. Berg: Why is the sugar so low?

Dr. Adams: I thing it is because of the numerous number of cells. Merritt and Fremont-Smith demonstrated years ago that inflammatory cells lower the sugar. Perhaps, too, neoplastic cells contain more glycolytic ferments and if present in large numbers will reduce the sugar content.

Dr. H. E. Marks: How high does the protein have to be in the spinal fluid to be pathognomonic of tumor?

Dr. Richardson: A high protein alone is not pathognomonic; both neoplasm and inflammatory disease can raise the spinal-fluid protein quite high. One would have to be guided by the cytology and other components of the fluid.

NOTES OF INTEREST

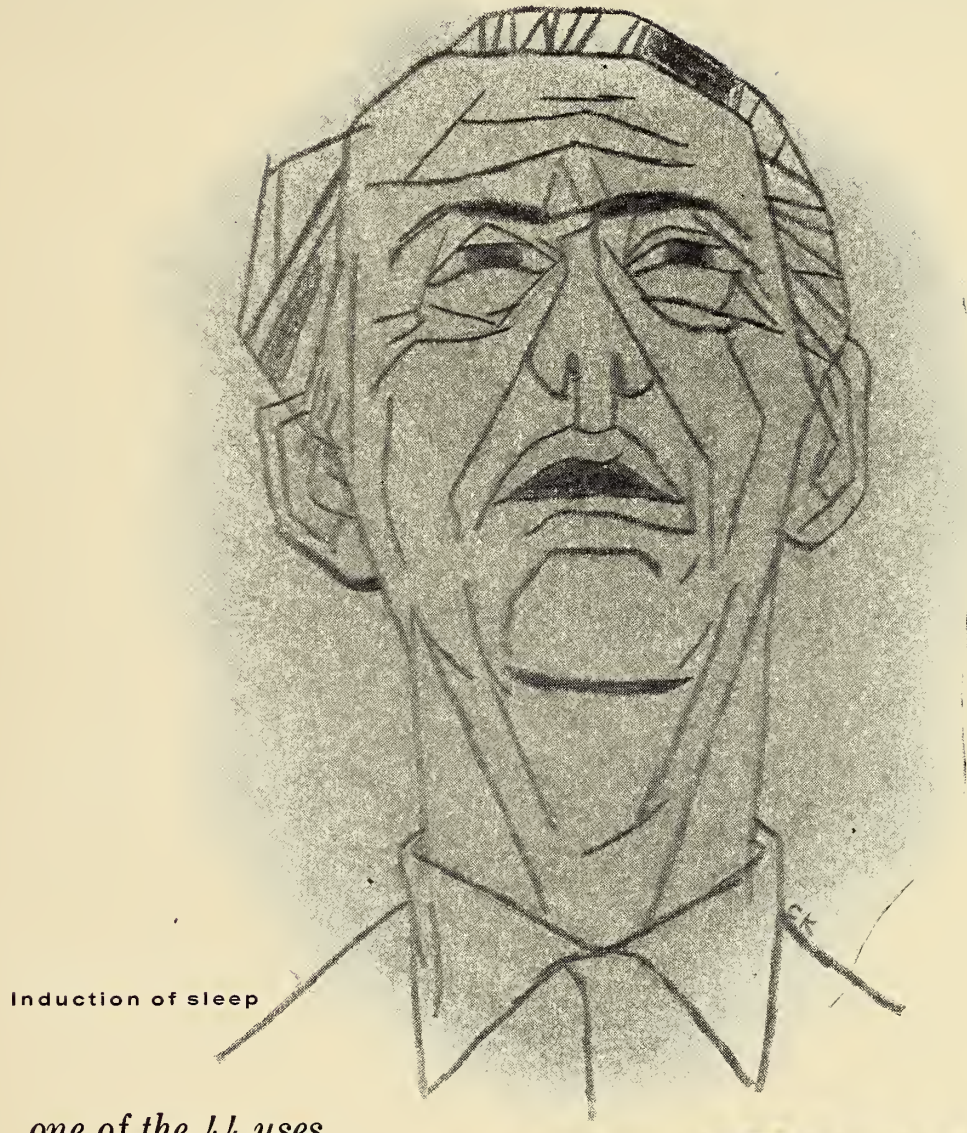
recent report received from the Washington Office of the American Medical Association comments as follows:

FUNDS ALLOCATED FOR EXPENDED HILL - BURTON CONSTRUCTION PROGRAM. Funds have been allocated to states for the first year's operations of the Hill-Burton expansion act, passed by the last Congress to stimulate the construction of health facilities. A total of $21 million was made available by Congress, plus $2 million for surveys. A total of $6.5 million is set aside for diagnostic-treatment centers and the same amount for chronic disease facilities, and $4 million for rehabilitation facilities and the same amount for nursing homes. Money must be used for diagnostic-treatment centers, nursing homes, chronic disease hospitals, and rehabilitation facilities. Except for money earmarked for rehabilitation facilities, states are allowed to shift money from one category to another. The money is distributed to states on a formula taking into account per capita income of the states as well as their population.

There is allocated to Arizona (in thousands rounded to the nearest thousand) $300 of which $100 is earmarked to each category "diagnostic-treatment centers" and "chronic disease facilities"; also $50 each for "rehabilitation facilities" and "nursing homes".

NARCOTICS BUREAU WORKING ON ORAL PRESCRIPTION LAW. Treasury Department's Bureau of Narcotics, which is expected to administer the new oral prescription law (Public Law 729), is working on regulations preparatory to consultation with drug manufacturers, pharmacists, and American Medical Association on what drugs to place on the exempt list. This list will name all narcotics drugs having little or no addition liability that may be prescribed by telephone. Meanwhile, the Bureau reminds physicians that the federal law does not supersede state laws barring oral prescriptions. Virtually all states, with the exception of California, forbid oral prescribing. With a majority of state legislators meeting this coming year, interested groups will be making a strong effort to get state laws changed to conform with the more liberal new U. S. law.

This new federal law provides that a number of narcotic drugs "having little or no addiction liability" may be prescribed over the telephone. It will be months, however, before the list can be compiled.



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THE President's PAGE

PUBLIC SERVICE AND ELECTION TIME

THE FALL SEASON HAS RETURNED AGAIN AND MOST OF US HAVE ENDED OUR VACATIONS. THIS SEASON IS COMMONLY THE TIME WHEN PUBLIC SERVICE IS AT ITS HIGHEST AND MEDICINE HAS BEEN INCREASINGLY ACTIVE IN SUCH SERVICE. SCHOOL EXAMINATONS, COMMUNITY CHEST, RED FEATHER DRIVE AND CIVIC ENTERPRISES OF ALL TYPES ARE COMMANDING OUR RESPECT AND COOPERATION. THIS YEAR, IN ADDITION, IS AN ELECTION YEAR AND ALL DOCTORS SHOULD EXERCISE THEIR FRANCHISE CAREFULLY, EVALUATING THE ISSUE AND SUPPORTING THOSE CANDIDATES WHICH ARE GOOD FOR OUR STATE AND COMMUNITY. I BELIEVE THE STATUS OF MEDICINE IN RECENT YEARS DUE TO EFFORTS OF ITS ACTIVE MEMBERS, HAS BEEN ELEVATED A GREAT DEAL IN THE PUBLIC MIND, AND WE SHOULD MAKE EVERY EFFORT TO CONTINUE THE ADVANCE. ABOVE ALL ELSE, BE CERTAIN TO *VOTE*.

OSCAR W. THOENY, M.D.,

PRESIDENT, ARIZONA MEDICAL ASSOCIATION

Editorial

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The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.
2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. (See MEDICAL WRITING by Morris Fishbein).
3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.
4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.
5. Submit manuscript typewritten and double-spaced.
6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.

The Editor is always ready, willing, and happy to help in any way possible.

NURSING SCHOOLS IN TROUBLE

MUCH has been said and written in the last few years about the plight of our medical schools. Very little, comparatively speaking, has been said about nursing schools. We know that much effort has been directed in recent times to acquainting the people with the shortage of nurses and urging enrollment of eligible candidates in our nursing schools. It may come as a surprise to you then that our nursing schools have problems too.

Nursing schools have been too often taken for granted. Most nursing schools are associated with a large hospital, and the average physician or layman has been prone to think of them as a self-supoprting adjunct to the hospital service. On the surface it would seem that this must be true. The services rendered to the hospital by the nurse in training would otherwise have to be rendered by rather highly paid employees if the student nurses were not available. Some of the instruction in the nursing school is furnished by staff members of the hospital at no charge to the school. This, of course, is not the whole picture and the hidden expenses which are never obvious to the general public are deadly.

According to information which has reached us, cost studies at a number of the nursing schools throughout the United States have revealed that the cost of training a student nurse at most of the nursing schools is in the neighborhood of $1400 per year. This is a net cost figured after the value of the services which the nurse renders to the school or hospital has been taken into consideration. Many hospitals and universities are beginning to wonder whether or not they can afford this luxury. At this rate, a small nursing school which admits only ten new students per year would have a yearly expense of about $42,000 in operating the nursing school.

This condition has serious portent. Already it has been reported that one of the largest and best known universities of the South has closed its nursing school. Only recently, one of the hospitals in Phoenix decided not to take a freshman class of nurses, probably as the first step toward closing its nursing school. There is no reason to believe that other nursing schools may not follow these examples. This in the face of increasing publicity urging young women of America to adopt nursing as a career.

The matter should concern every physician and every citizen of our country. The solution to the situation should be sought now and applied as soon as available.

TOPICS OF *Current Medical* INTEREST

RX., DX., AND DRS.

By Guillermo Osler, M.D.

WE quoted a 'possibly' sensible scheme by Dr. Ralph Gancher of Oakland, California last year, in which he proposed the use of a pill containing several delayed-action drugs (for week-ends, etc), to the point of 'possible' absurdity. Here is another of his ideas . . . In an article called "Cancer, Schmancer" he proposes that PREMIUM COUPONS be given with each purchase of CIGARETTES, since few people will stop smoking anyway. These would give the smoker a series of prizes ranging from a minifilm of chest, to a resection of the lung (with three glorious weeks in the hospital), to 24 months of psychoanalysis on a Simmons' Beautyrest Mattress for those who develop only a cancerophobia.

A search for methods by which cigarette-smoking could be discouraged has never been very successful, as has been noted above. (The recent cancer scare knocked off sales a few per cent, and caused the stock prices to fall off a bit, but the leading cigarette manufacturer reported a net income gain for the first half of 1954) . . . Now a report has been made on two methods which seem to be effective. Admittedly they would work the 'hard way' . . . Infectious hepatitis and infectious mononucleosis may both result in a distate for cigarettes. The methodology is not known, but both have an effect on the liver.

Other people than gynecologists should be interested in women who develop hydrothorax and ascites, since the G.P. or internist or surgeon may see them first . . . The urgency to recognize this MEIGS' SYNDROME is because it is caused by a curable benign fibrous tumor of the ovary, and because the fluid will lead to death if exploration is avoided or not thought of . . . More other causes of fluid can easily be ruled out.

We have been inclined to raise an eyebrow or two at the value of INTERNATIONAL MEDICAL JUNKETS. They seemed mostly to help the vanity, the travel urge, and the income tax . . . The recent hegira of the American College of Surgeons was not entirely for pleasure, however, and the quality of the topics and speakers was strictly topdrawer . . . Four scientific sessions were held on the 'Queen Elizabeth' en route. Walson-Jones of London voiced the British conservatism towards metals for internal fixation of fractures, but Cave of Boston stressed the economic saving. Ravdin of Philadelphia and Love of London agreed on the value of operative cholangrography for stones in the common duct. Tollefson of Los Angeles spoke on endometriosis. Oldham of Liverpool was against refeeding intestinal contents aspirated in the treatment of obstruction. Thorlakson of Winnipeg urged early decompression. Waugh of Mayo's discussed cecostomy and colostomy. Graham of St. Louis, Sellors of London, Allen of Boston, Abel of London, Allison of Leeds, Sweet of Boston all urged early operation for cancer, and reported discouraging rates of surgical cures. Rob of London reported transplants of large arteries. Thomas of London and John Jones of Los Angeles told of their progress in resection of pulmonary TB . . . Panels were equally well staffed, and the opinions were apparently 'forthright' . . . "Many facets of French medical life seem stagnant" said Dr. Paul Quaintance, but the medical and research facilities at the University of Paris (built by Marshall Plan funds) excell almost any in the United States.

A meeting in Washington, D.C., of the American Institute of ULTRASONICS in Medicine produced at least two interesting items, 1. J. H. Aldes of the Cedars of Lebanon Hospital in Los Angeles described a huge increase in the duration of improvement when ultrasonic-wave therapy was added to hydrocortone in various types of arthritis and bursitis. 2. There were four hundred (400) members of this highly specialized society in attendance.

In regard to CORTISONE and HYDROCORTISONE, Dr. Edward Boland, also of Los Angeles, says (in a person communication) "There is a greater dissociation between the anti-inflammatory (or anti-allergic) properties of hydrocortisone and its adverse effects" than there is with cortisone. This would make the former of greater value and safety when it is used for such conditions.

The early use of ULTRASONIC ENERGY in physiotherapy was accompanied by warnings of its hazards and limitations. The wider current use almost assures that someone will forget . . . To prevent carelessness all technicians should be shown the results of exposure which occurred in the legs of dogs (by Ardan, Janes, and Herrick of the Mayo Foundation). The wattage was the same as for clinical use, but the sonic head was held stationary . . . Same warning as the cops give — Keep moving!

IN DEFENSE OF PSYCHIATRISTS — People, patients, and physicians may all fail to love psychiatrists. They are indeed in a tough situation,

HBA FOR SECURITY

THE HOSPITAL BENEFIT Bulletin

Special Published Bi-Monthly by the Hospital Benefit Association, First Street at Willetta, Phoenix October, 1954

Question Quiz
Do you know the answers?

Q. What per cent of the claims paid by the Hospital Benefit Association require "claim forms"?

A. Only about 3 per cent. When more detailed information is needed, it is usually to establish the date of onset of illness. While members are eligible for benefits because of accident from the first day of membership, eligible illnesses are those not specifically excluded which commence 30 days after effective date.

Q. Is there any way that the doctor can help speed payment of his bill?

A. Yes. The sooner the doctor returns the filled-in billing form to the Association, the sooner he can be paid. The HBA tries to send a check within 3 to 5 days after the proper bill form is received.

Q. Does the Surgical Plan pay for office calls and home calls for emergency accident treatment?

A. Yes. HBA Surgical schedules provide for treatment of accidental injuries anywhere, providing such treatment is administered within 24 hours after the accident. The HBA does not pay for medical treatment of illnesses.

Q. How about X-rays — do they have to be taken in a hospital?

A. Not necessarily. Under the provisions of the Surgical Plan, an X-ray of a fracture or dislocation may be taken at a doctor's office or an X-ray lab if needed because of an accident and if within 24 hours after the accident.

Q. May members of HBA have the Surgical Plan without having a Hospital Plan?

A. No. The Surgical Plan is available only to members who have enrolled in one of HBA's Hospital Plans.

THANK YOU, DOCTOR, FOR THOSE KIND WORDS

We at the Hospital Benefit Association are extremely gratified by the large number of new members who come into the fold because "My doctor told me you were good reliable people".

More applicants than you may realize tell us this: "I thought your plan was probably best, but I called my doctor to see what he thought of HBA. He told me that you pay as promised and pay quickly, and that his relations with HBA had always been pleasant."

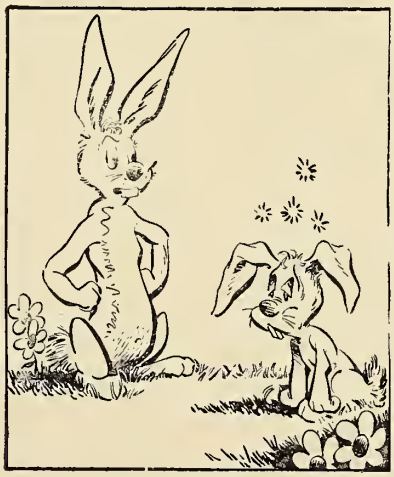
In practically every case that we know of, the physician has had good words to say about the Hospital Benefit Association when a patient has asked for a frank opinion. And that makes us very happy, as it indicates that our simple, speedy payment procedure is meeting with physicians' approval.

Give-Away Department

We still have a couple of choice items that are yours for the asking. Number 1 is a neat plastic desk easel containing a small display card instructing HBA members to present their Membership Cards when they come to your office. A real time-saver.

We also have a supply of the Better Business Bureau booklet, **Facts You Should Know About Accident and Health Insurance.** A good reference when patients ask about health insurance.

For either or both of these items, call the Phoenix Home Office (ALpine 8-4888) or the Tucson Office (3-9421).



"You'll soon learn the difference between carrots and radishes."

3 to 5 days

It is our practice, whenever possible, to make payment directly to the doctor (and the hospital) within 3 to 5 days after we receive the bill. In cases of operations, payment is made direct to the surgeon upon receipt of a simple short billing form which takes only a few seconds to fill out. In cases of emergency first aid, the doctor's regular bill form usually suffices if it contains the date, the member's name and membership number, the nature of the accident, the treatment and, of course, the charge for the treatment.

Claim Forms

We don't like it, but 3 out of every 100 claims paid require a comparatively short "claim form". Usually this is because the patient did not take advantage of the convenience of his Membership Card and paid the hospital himself; or something may come up which disagrees with information given us about previous health history. Doctors, realizing that we request one of the "claim forms" only when absolutely necessary, have been extremely cooperative, and we appreciate it very much.

We Try!

We try with sincere effort to make our services to our members as convenient as possible . . . not only for them but for you, also. With your continued generous cooperation, we will be able to continue operating in a manner to merit your support.

Thank you, Doctor!

says Dr. D. Jackson of Stanford . . . The causes of discord include the cost of psychotherapy, the relative youth of the specialty, the often hostile attitude of the referring physician, and (here is real soul-searching) the unhelpful attitude of certain psychiatrists.

About 40 per cent of persons who receive large doses of isoniazid develop NEURITIC symptoms and signs. Paraesthesia and numbness of the fingers or toes, muscle soreness and weakness, patchy hypesthesia, and some loss of vibratory sense may be noted . . . The signs and symptoms usually clear when the drug is D.C.'d., but burning feet, atrophy, etc. may continue for months . . . Biehl and Vilter have noted a high excretion of Vit. B6 when isoniazid is being taken. This, as well as a similar neuritis, occurs when a Vit. B6 antagonist (desoxypyridoxine) is given . . . The logical deduction is to give PYRIDOXINE (Vit. B6) with the isoniazid to prevent neuritis — and they say it works (Proc. Soc. Exper. Biol. and Med.)

The first use of many ANTI-TUBERCULOSIS DRUGS was at or near the Mayo Clinic. Dr. David T. Carr is now the young chief of that part of the medical service, and he stresses at least two points in therapy in an editorial for 'Minnesota Medicine' . . . The minimum duration of chemotherapy should be 8 to 12 months, but in many instances it should be continued for several years. Two of the usual three drugs (SM, PAS, and INH) should be used (and many people think that either SM or INH should be held in reserve over a long pull) . . . The lesions may be labelled 'reversible' and 'irreversible'. Rest and chemotherapy and collapse therapy can be used for the 'reversible' component; excision should be used on the 'irreversible' part.

'Coffee-breaks' were once supposed to be relaxing. Now they are a ritual, and have come to the point of being condemned . . . Dr. L. J. Starry, prof. of surgery at the U. of Oklahoma, says that they are pernicious. They increase the intake of coffee and the use of cigarettes. They can possibly be blamed for the INCREASED INCIDENCE OF PEPTIC ULCERS . . . During the increase, women are worse off than people. The ratio formerly was 1 in 5; now 1 of every 4 ulcers belong to a woman.

"CANKER SORES" are one of the commonest subclinical complaints, and they cause more medical questions (as seen, e.g., in 'Minor Notes and Queries') . . . The allergist favors food as a cause, and particularly chocolate. The stomatologist considers trophic changes, smoking, a difference in electric potential between fillings in the teeth, etc. . . . Now the fashionable cause is a substance which has become a whipping-boy for other reasons—CHLOROPHYLL. It can be present in toothpaste, breath sweeteners, or mouth wash, and cause the local reactions more often than rarely.

Just suppose, for instance, that there was A LAW REQUIRING A CULTURE TO BE TAKEN from a wound or infection BEFORE an antibiotic could be used. How would the bad effects balance up against the good? How much money would be wasted compared with the value from sensitivity tests, or possibly even the saving of life? . . . The relative value would be hard to predict, but it would often be a trouble and needless expense, tho it would often help a great deal . . . Pratt and Dufrenoy write on "Emergency Use of Antibiotics in the Treatment of Wounds" in the Texas Reports of Biology and Medicine. They believe that PROPHYLACTIC ANTIBIOTICS should be used in severe, deep, extensive, and greatly contaminated wounds. Combined therapy is the method of choice. The causal organism should be identified and tested for sensitivity before treatment of an established infection, but material for culture (and possible future tests) is all that is needed before emergency use of drugs.

When a Detroit report on SANDPAPERING THE SKIN for acne was quoted in this column a couple of years ago it was partly from amazement . . . Imagine the surprise when a notice from the University of California (L.A.) postgraduate medical education service was opened, and it was found that sand-papering has become "DERMAL ABRASION", and that they offer a SIX-DAY COURSE in theory and practice.

A reprint came to the surface of the many large stacks on Osler's desk, and it seems odd, as seen in the present day. It was entitled "RELATION OF A STREPTOCOCCUS TO EPIDEMIC POLIOMYELITIS" and the author (as anyone who has been in medicine for 30 or 40 years would know) was Edward C. Rosenow of Rochester, Minn., and Cincinnati . . . A strep was said to be the cause of 'posterior' polio (herpes). A strep was often found in anterior polio patients and contacts. It was found in polio virus cultures. Immunologic tests were suggestive in polio patients. A virus could be obtained from strep cultures. An anti-strep serum was found effective. Etc., etc. . . . This is not said in ridicule, since the polio problem is not yet nailed down. It is mentioned because THE DATE ON THE ARTICLE is as recent as JUNE 1952.

Hundreds of PRACTICAL IDEAS were proposed and discussed at the annual meeting of the AM. HOSPITAL ASS'N. Fifty-seven of them were listed in 'Hospital Management'. Thirteen seem interesting enough to jot down here . . . SUCTION EQUIPMENT at every bedside as well as oxygen outlets) is a convenience and a money-saver. HANDRAILS along the corridors are a help to early ambulation, and more shower-

baths are needed because of the same trend. A PORTABLE CHAPEL, costing $35, may implement a spiritual consideration for patients. DUMB-WAITERS should be installed more widely. 'HIGH-LOW' BEDS are more necessary as the average age of patients rises. Placing the doctor's MAIL BOXES near the record librarian's desk may provide a fine trap. The number of POST-ANAESTHESIA BEDS varies from 1 to 3 beds per operating room. The SUPER-FACILITIES which are available in some of the Kaiser Foundation hospitals shouldn't be mentioned in ordinary hospital circles (a three-way radio; hot and cold running water at the bed; electrically controlled curtains; placement of 8 beds around a service area.) The WOMEN'S AUXILIARY of various hospitals have provided or staffed a DAY NURSERY for nurses' children, a PLAYROOM for children of outpatient mothers, TRANSPORTATION for needy clinic patients, an EVENING INFORMATION DESK, and a LIBRARY OF PICTURES for rotation among the rooms.

HILL-BURTON CONSTRUCTION

The Division of Hospital Facilities of FSA reports that as of August 31, 1954 no new projects had been approved for Hill-Burton grants in Arizona. Status of all Hill-Burton hospital construction in Arizona, is as follows:

COMPLETED AND IN OPERATION: 13 projects at a total cost of $11,508,837, including federal contribution of $3,401,750 and supplying 757 additional beds.

UNDER CONSTRUCTION: 2 projects at a total cost of $525,000, including federal contribution of $240,000 and designed to supply 127 additional beds.

APPROVED BUT NOT YET UNDER CONSTRUCTION: None.

MARICOPA COUNTY CONFERENCE ON RECENT ADVANCES IN MEDICINE

PHYSICIANS of Arizona and nearby County Societies in neighboring states are being invited to attend the first annual series of lectures entitled the "Maricopa County Conference on Recent Advances in Medicine" it has been announced by Donald A. Polson, M.D., president of the Maricopa County Medical Society of Phoenix, Arizona.

The initial conference will be held at the Arizona-Biltmore Hotel in Phoenix on November 3 and 4, 1954.

Invitations are being issued through the president of each County Society by Doctor Polson who said "we feel that attendance by physicians from adjacent County Societies in our neighbor states will make the conference of considerable importance in maintaining the caliber of medical standards in this area of the country."

With physicians being invited from New Mexico West Texas, Arizona, San Diego County and Sonora, Mexico it is expected there will be a splendid representation of the Southwest and Pacific areas.

Authorities presenting papers at the meeting will be Paul Starr, M.D., of Los Angeles; George C. Griffith, M.D., of Pasadena; Marcus Krupp, M.D., of Palo Alto and Gordon Meiklejohn, M.D., of Denver.

Doctor Starr is Clinical Professor of Medicine at the University of Southern California. He will speak on "Recent Advances in Endocrine and Metabolic Diseases".

Doctor Griffith is a Professor of Medicine, Coordinator of Cardiovascular Diseases at the University of Southern California. His subject will be "Recent Advances in Heart Diseases".

Doctor Krupp, Director of Laboratory Medicine at the Palo Alto Clinic, will speak on "Recent Advances in Liver and Kidney Function Tests."

Doctor Meiklejohn is Professor of Medicine at the University of Colorado. He will present "Recent Advances in Virus Disease".

The Conference has been approved for formal Post Graduate training. Doctor Robert A. Price, Chairman of the Educational Committee, Arizona Academy of General Practice has announced that members of the Arizona Academy of General Practice will be allowed credit for each hour of attendance.

The registration fee will be $10 for each participant.

The Arizona-Biltmore, offering every resort facility, is making a special rate for conference guests of $22.50 per person, American plan. Arrangements have been made for delegates not living in the hotel to attend the luncheons and dinner.

Any inquiries about the Conference should be addressed to James Barger, M.D., Maricopa County Medical Society, 2025 N. Central Ave., Phoenix.

BASIC SCIENCE PROGRAM
MARICOPA COUNTY MEDICAL SOCIETY

	SUBJECT	DOCTORS	DATE	
I.	**Introduction**	Richard O. Flynn	Sept. 7	1*
II.	**Pulmonary System (W. A. Reed, Chrm)**			
	1. Physiology of respiration	W. A. Reed & C. T. Reed	Sept. 14	2*
	2. Anatomy and pathophysiology	George Scharf & R. A. Gutekunst	Sept. 21	3*
III.	**Cardiac (Joe Ehrlich, Chairman)**			
	1. Anatomy and embryology of the heart (congenital anomalies)	Lorel Stapley	Sept. 28	4*
	2. Physiology of heart and circulation	Morris Deitchman	Oct. 5	5†
	3. Physiology of E. K. G.	Robert Beers	Oct. 12	6†
	4. Pathology (Inflammation and disturbances in circulation)	Lorel Stapley & Hayes Caldwell	Oct. 19	7†
	5. Pharmacology (Cardiac drugs)	Joe Ehrlich	Oct. 26	8†
IV.	**Pathophysiology of peripheral vascular diseases**	David James	Nov. 2	9*
V.	**Kidney (J. Faulkner, Chairman)**			
	1. Normal and pathological physiology	J. Faulkner & D. Manley	Nov. 9	10*
VI.	**Gastro-intestinal tract (Joe Bank, Chrm.)**			
	1. Physiology of digestion			
	a. Stomach and esophagus	Joe Bank & Everett Dean	Nov. 16	11*
	2. Physiology of liver and biliary system	Donald Buffmire & James Berens	Nov. 23	12*
	3. Physiology of digestion			
	a. Small intestine and pancreas	Al Brewer & Boyd Hayward	Nov. 30	13*
VII.	**Hematology (James Barger, Chairman)**			
	1. Physiology of the erythron (iron metabolism)	Hayes Caldwell	Dec. 7	14†
	2. Physiology of the white blood cells (normal and abnormal)	O. Williams	Dec. 14	15†
	3. Disorders of coagulation	James Barger	Dec. 21	16†
	4. Hypersplenism and hemolytic states	Lee Ehrlich	Jan. 11	17*
	5. Blood groups	James Barger	Jan. 18	18*
VIII.	**Anaphylaxis**			
	1. Immunology and allergy	Charles Vivian	Jan. 25	19*
IX.	**Eye signs in clinical medicine (Panel) (Phil Loveless, Chairman)**	Phil Loveless, Harry French David Long, Shaw McDaniel	Feb. 1	20†
X.	**Female genital system (Robert Moore, Chairman)**			
	1. Physiology of menstruation	Philip Windrow & Byron Butler	Feb. 8	21†
	2. Physiology of pregnancy	Robert Moore & Joe Bonnet	Feb. 15	22†
XI.	**Endocrinology (Roger White, Chairman)**			
	1. Testes - pituitary	Paul Singer & Roger White	Mar. 1	23*

* after program sequence number indicates that program will be held in the Auditorium of the Nurses' Home, Good Samaritan Hospital, 7:30 P.M.

† after program sequence number indicates that program will be held in the Assembly Room, St. Joseph's Hospital, 7:30 P.M.

	SUBJECT	DOCTORS	DATE	
	2. Thyroid, adrenal and pituitary	Roger White	Mar. 8	24*
	3. Interrelationship of fat, carbohydrate, protein metabolism	Eleanor Waskow	Mar. 15	25*
XII.	**Water and mineral metabolism (acid-base balance), (Ashton Taylor, Chrm.)**	Ashton Taylor, Richard Creasman, M. Wood, Raymond Jennett, (3 lecture periods)	Mar. 22 Mar. 29 Apr. 5	26* 27* 28*
	1. Calcium and phosphorus metabolism (physiology of bone)	DeWitt Englund	Apr. 12	29†
	2. Bone repair (functional physiology)	Ray Fife	Apr. 12	29†
XIII.	**General practitioners advice**	Charles Cooke & Melvin Kent	Apr. 19	30†
XIV.	**Growth and development (Panel) (Howard M. Purcell, Jr., Chairman)**	H. Purcell, Jr., D. Manley, R. Creasman, Robert Barfoot, Fred Ewart	Apr. 26	31†
XV.	**Bacteriology** 1.Enteric diseases	H. Gilbert Crecelius	May 3	32†
	2. Systemic mycoses (including Tbc., virus and rickettsial diseases)	G. Scharf & C. Salsbury	May 10	33*
XVI.	**Basic human behavior (Panel), William McGrath, Chairman)**	W. McGrath, O. Bendheim, L. Dagres, R. Duisberg	May 17	34*
XVII.	**Ear; anatomy and physiology**	Jack Brooks, V. A. Dunham	May 24	35*
XVIII.	**Anatomy and physiology in neurological diseases**	John Eisenbeiss & John Green	May 31	36*
XIX.	**General adaptation syndrome (DeWitt Englund, Chairman)**	DeWitt Englund, J. Cook, W. Cleveland, R. White	June 7	37*

PRELIMINARY NOTICE OF POSTGRADUATE MEDICAL SEMINARS

Postgraduate medical seminars are being arranged for your advantage through the Professional Board of your Arizona Medical Association with the financial support of the Arizona State Department of Health. In order that you may plan NOW to attend, the following preliminary schedule is presented for your consideration:

Note: Those desiring overnight hotel accommodations at either EL TOVAR or BRIGHT ANGEL LODGE please contact immediately Leo Schnur, M.D., Grand Canyon Hospital, Grand Canyon.

Oct. 23-24, (2 days) GRAND CANYON:
Oct. 26-27 (1½ days) YUMA
Oct. 28 (1 day) COOLIDGE or FLORENCE
Oct. 29 (1 days) BISBEE or DOUGLAS
Oct. 31 - Nov. 1 (1½ days) SAFFORD

ORATORS:

Harold Brown, M.D. Internist and William Mortez, M.D. Surgeon, Univ. of Utah School of Medicine

To be announced, Anesthesiologist, Dermatologist or Pediatrician, Ariz. Med. Ass'n.

Subjects: To be announced later.

Every effort is being made to make these seminars outstanding. Your participation is invited and presence urged. MARK YOUR CALENDAR NOW.

THE ARIZONA MEDICAL ASSOCIATION, INC.
Hugh C. Thompson, M. D.
Chairman, Professional Board

AMERICAN OCCUPATIONAL THERAPY ASSOCIATION

The 37th Annual Conference of the American Occupational Therapy Association will be held at the Shoreham Hotel, Washington, D. C., October 16-22, 1954. The meetings will be as follows:

October 16-17—Preliminary Meetings
October 18-19—Institute — Interpersonal Relations
October 20-21-22—General Conference —
Theme: "Capitalize Your Assets"

Interesting TOPICS

RECOMMENDED READING IN CURRENT MEDICAL JOURNALS

MEDICAL EXPERTS. Henry Weihofen, Professor of Law at the New Mexico College of Law, writes in a very entertaining and instructive manner on "How Can We Eliminate the Battles of Medical Experts?" in the Nebraska State Med. Journ of June, 1954. He discusses in a very understanding way the reasons for differing viewpoints of doctors and lawyers, and the causes of disagreements among medical experts. He discusses the remedies which have been successful in eliminating the biased testimony. He considers the hypothetical question to be an outmoded, useless and dangerous phase of medical testimony and should be barred from court procedure.

SMOKING AND THE DOCTOR. J. W. Wisher, M.D., Evansville, Ind. Medical Times, June, 1954. Brief and trenchant article, with the following conclusions, in part:

There is general agreement that the excessive use of tobacco may cause, in susceptible cases, cancer of the lip, tongue, buccal mucous membranes and bronchi. There is evidence that cancer of the nasopharynx, larynx, esophagus, stomach and colon may also be caused by prolonged excessive use of tobacco. Cardiologists and internists agree that the excessive use of tobacco can cause angina pectoris, coronary thrombosis, thrombo-angiitis obliterans, and peripheral endarteritis.

DOCTORS AND DOPE. J. DeWitt Fox, M. D., in Medical Annals of the District of Columbia, June, 1954. It seems incredible that any large number of doctors, with their supposed knowledge of the effects of narcotics, should become addicts. But this author says the percentage of addicts among doctors is surprisingly large and increasing. He deplores the fact that the dangers of self administration of demerol, methadone or morphine is not generally appreciated and not taught to medical students, interns or nurses, as it should be. No doctor should ever give himself a dose of such a narcotic. "The man who treats himself has a fool for a doctor."

THE MANAGEMENT OF ESSENTIAL HYPERTENSION. Garfield G. Duncan, M.D., and Robert J. Gill, M.D., Philadelphia, Pa. The New Eng. Journ. of Med., July 16, 1953.

"The prevalence of essential hypertension, its crippling potentialities and its threat to life make it one of the greatest of clinical problems." With this introductory these authors discuss the outlook and clinical evaluation, and then "correlate the respective grades of hypertensive disease with the therapies that promise optimum results." Their outline of therapy according to the degree of the hypertensive process cannot be condenced satisfactorily into an abstract and must be read in the original article by those interested. Their six degrees of hypertensive disease, with the medication and/or surgical procedures indicated in each, may be mentioned: (1) Mild degrees with intermittent, or sustained, elevation of the blood pressure. (2) Moderate to severe degrees with a sustained hypertension, e.g., 170-230/105-120 pressures, when the measures outlined for mild degrees have failed. (3) Severe hypertensive disease with unfavorable progression; e.g., pressures of 220-280/120-140, after therapy has proved inadequate; sympathectomy in about 6 per cent of hypertensive patients, if patient can meet certain definite qualifications. (4) Diastolic pressures above 100 after sympathectomy. (5) Sustained severe hypertension (diastolic above 130); adrenalectomy enters the picture here. (6) Malignant hypertension with azotemia.

The qualifications for sympathectomy are interesting. Patients with grade 3 hypertensive disease must meet three criteria; should not be over 55 years of age and preferably under 50; if cardiac enlargement is present it must not exceed normal dimensions by 50 per cent; if carceed normal dimensions by 50%, determined by actual measurements by x-ray aid; must not have an increase above 24 mg. per 100 cc. in the blood urea nitrogen. The drug therapy discussed include the veratrum alkaloids, apresoline, hexamethonium, dibenzyline, rauwolfia serpentina.

THE MANAGEMENT OF THE ALLERGIC CHILD. By Leo H. Criep, Section on Allergy, School of Medicine, University of Pittsburgh and the Presbyterian Hospital, Pittsburgh, Pa.

"As a rule, in spite of wishful thinking and endless and harmful temporizing, if untreated, the allergic child continues to suffer. Extension of the allergic symptoms over long periods of time affects the child's growth, health, and personality. He loses weight, becomes irritable, fretful, and sleepless. He misses school, cannot play with other children, and becomes generally incapacitated. Because so much can be accomplished by early treatment and because the institution of such therapy is within the reach of every practitioner, it becomes ever more important that every physician acquaint himself with and practice the procedures which are applicable in the management of the allergic child."

Closing paragraph in the article. Borrow the journal and read the whole article. Penna. Medical Journal, June, 1953.

ARIZONA Pharmaceutical PAGE

KEEPING POSTED

By Joseph A. Zapotocky, Ph.D.
Pharmacy College, University of Arizona

AT the rapid rate that new drugs are discovered and brought on the market, both the pharmacist and physician have a herculean task keeping pace with them. On occasion, it may seem hopeless; the complexity of the organic formulas, the variety of terminology, the duplication of products with numerous trade names, all make the work of keeping posted more difficult. And there is no indication that simplification will occur soon. Although the problem is recognized, no solution, that would be satisfactory to all concerned, seems forthcoming.

Every physician has two allies — two valuable sources of information on new drugs other than his own medical journals — the pharmacist and the medical representative. The pharmacy nearly will most likely have a literature file on new drugs and may also have a section in the prescription room specifically devoted to new drugs and literature pertaining to their use. The pharmacist will be happy to have any physician drop in periodically to make use of them. Some pharmacists mail a monthly information bulletin to their neighborhood physicians. Other pharmacists detail the physicians in their neighborhood and bring them the latest information about new drugs, new dosage forms, point out duplications of drugs, and inform them of new pharmaceutical techniques which may be incorporated into their prescriptions. During these visits, problems of mutual concern may be discussed and may result in united action. Such meeting of physician and pharmacist leads to a better understanding between them and results in better ethical practices on the part of both. This cooperative relationship can improve the medical habits of the public and minimize some of the poor public relations we now enjoy.

The second source of information on new therapeutic agents is the manufacturer's medical representative, sometimes referred to as the "detail man." In a majority of cases he is a pharmacist or an individual with training in one of the allied sciences. Each man is trained by the manufacturer to do a certain job — to bring the physician information on new products. This may include their chemical classifications, indications for their use, action, dosage, and forms in which they are or may be available. Comparison with products already on the market may be made. If any physician has a specific interest in the detailed product, the representative is usually prepared to obtain further literature sources for him or to provide him with reprints of scientific literature. In the few minutes the physician allots him periodically, the detail man outlines the pertinent facts about one or two products which the physician would otherwise be forced to obtain by digesting material in medical journals, attending seminars, or returning to medical school for refresher courses. The detail man makes no pretense of thoroughly understanding the theories or mechanism of the action of drugs although he may quote some at times. He makes no attempt to teach the physician pharmacology or therapeutics but merely presents those facts which the manufacturer feels is important to an understanding of the action and use of its product. This service costs nothing, yet it saves the physician time necessarily expended in reading infinite medical literature about these products.

The pharmacist and medical representative can make the physician's job of keeping posted on new drugs a lot easier if given half a chance.

Organization PAGE

CIVICS

Norman A. Ross, M.D., Phoenix, Arizona

THE NATIONAL FOUNDATION FOR INFANTILE PARALYSIS, INC., 120 Broadway, New York 5, New York, State Office 39 West Adams, Phoenix, Arizona.

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Those interested may contact this office or their local county polio chapter.

* * *

ARIZONA TUBERCULOSIS AND HEALTH ASSOCIATION, 111 East Willetta, Phoenix, Arizona.

"THE HEALTH OF THE FUTURE DEPENDS UPON THE RESEARCH AND EDUCATION OF TODAY" (Bacon).

The Arizona Tuberculosis and Health Association and the Arizona Trudeau Society wish to call to the attention of physicians in Arizona the opportunity for graduate study in the field of tuberculosis and related pulmonary disease under the fellowships offered by the American Trudeau Society.

RESIDENT FELLOWSHIPS

The American Trudeau Society, Medical Section of the National Tuberculosis Association provides a limited number of Resident Fellowships to promote the training of clinicians, medical teachers and administrators in the field of tuberculosis and related pulmonary diseases. Awards are open to citizens of the United States for work within this country. Candidates should hold the degree of Doctor of Medicine and preference will be given to those not more than thirty years of age.

Awards are made for graduate study in internal medicine, with emphasis on diseases of the chest, in an approved hospital. The American Board of Internal Medicine will accept one such year as part of the prerequisite training for certification in internal medicine and in pulmonary diseases.

All awards are determined by individual circumstances and are paid directly to the Fellow on a monthly basis.

Fellowships are granted for one year. Not more than two renewals will be considered. Fellowship applications must be received by February 1, 1955. Appointments may begin on any date at the convenience of the applicant, who may elect the hospital in which he wishes to study and the staff member who will supervise his work.

TRUDEAU FELLOWSHIPS

A few fellowships at a higher level of training and award are offered to specially qualified candidates who have been assured of a continued teaching appointment upon completion of training. Trudeau Fellowships are awarded for one year but may be renewed up to a total period of four years.

Further particulars concerning Resident and Trudeau Fellowships may be obtained on request. Address communications direct to THE DIRECTOR OF MEDICAL EDUCATION, AMERICAN TRUDEAU SOCIETY, % The Henry Phipps Institute, Seventh and Lombard Streets, Philadelphia 47, Pennsylvania.

* * *

KNOW YOUR SOCIAL SERVICE AGENCIES, VOLUNTEER AND GOVERNMENT:

Seven out of every ten families in the average American urban community receive an average of two units of such service each year. Ten (10) weeks, (20 per cent), of community payroll is assigned to social or welfare activity. Such programs aim to answer economic need, health, educational and behavior problems, and to provide for the use of leisure time.

The above figures were presented several years ago, and these do not include persons admitted to hospitals or the beneficiaries of voluntary insurance programs. Neither do they include those using public playgrounds.

The same source of information advises that as of that date there were seventy (70) national agencies, and more than five hundred (500) state and government organizations whose func-

tions were within or closely allied to the field of social work.

Voluntary social agencies and organizations comprise a total of four hundred forty two (442) at a national or international level, and five hundred ninety two (592) of lesser areas of service.

We counted the agencies in the index of the directory of the Health and Welfare Service of Phoenix as compiled by the Phoenix Community Council, (another local agency). Here are listed ninety four (94) government and voluntary agencies.

We offer that these many volunteer agencies and the acceptance of the voluntary insurance programs to date offer increasing possibilities and proves that the individual American wants to do for himself and others.

We, in this column, hope to familiarize you with the programs of the voluntary agencies and to stimulate and continue your interest and participation.

An international figure proposes that it is generally accepted that it is the duty of the public authority (government) in making laws and in disposing of public funds, to relieve the needy.

We offer, though we may be accused of being nationalistic, that in the face of this pronouncement and in the face of the jobs and appointees to be gained by public officials, volunteer agencies must be recognized and their activities continued and expanded. How else can we (in the public interest) avoid the need for government intervention?

Seven out of ten families have the social service habit.

* * *

ARIZONA SOCIETY FOR CRIPPLED CHILDREN AND ADULTS, INC., 207 Arizona Title Building, Phoenix, Arizona.

Two rehabilitation scholarships for doctors are now available to Arizona physicians.

The scholarships will range from $300 to $750 depending upon costs involved in the course selected. It was pointed out that there are no area restrictions on applications.

Suggested possibilities for rehabilitation training are: Dr. Meyer Perlstein, Cook County Graduate School of Medicine, Chicago; Dr. George Deaver, Institute for Physical Medicine and Rehabilitation, New York University, College of Medicine; Dr. Henry H. Kessler, Medical Director, The Kessler Institute for Rehabilitation, Pleasant Valley Way, West Orange, New Jersey; and Dr. Winford Phelps, Children's Rehabilitation Institute, Cockeysville, Maryland.

E. Leroy Larson, Ph. D. is the new director of the Samuel Gompers Memorial Clinic in Phoenix. Dr. Larson received his doctorate in special education and psychology at the University of Iowa. Until accepting the position here, he served as principal of the Iowa Hospital School which is affiliated with the University of Iowa Medical College.

Four regional crippled children's clinics remain on the thirteen-clinic schedule of the Society for the remainder of the calendar year. They are Nogales, October 24; Coolidge, October 31; Flagstaff, November 7; and Yuma, November 14. Local doctors may refer any patients, children or adults, to these clinics. The visiting staffs consist of orthopedic, pediatric and psychology specialists in addition to registered physical and speech therapists. This year the clinics are being held through the combined efforts of the Society and the Crippled Children's Division of the Arizona State Department of Public Welfare.

SIXTH WESTERN INSTITUTE ON EPILEPSY

This Institute sponsored by the Hogg Foundation, The University of Texas - Medical Branch, and Baylor Medical College will be held October 22 and 23, 1954, at the Jack Tar Hotel in Galveston, Texas. The purpose of the Institute is to bring together professional and lay workers in the field of epilepsy as a means of coordinating their efforts toward the eventual betterment of the epileptic. This year's program will be devoted primarily to the psychosomatic aspects of epilepsy. The program will be provided by a number of physicians and medical workers experienced in the field of epilepsy, and the special guest speaker will be the President of the American Academy of Neurology, Howard D. Fabing, M.D., of Cincinnati, Ohio.

These Institutes are held annually in the major cities of the Pacific Coast and Rocky Mountain area, and the 1955 meeting will be held in Phoenix, Arizona. For further information, contact John L. Otto, M.D., at John Sealy Hospital, Galveston, Texas, or John Raymond Green, M.D., Park Central Medical Building, Phoenix, Arizona.

PUBLIC RELATIONS INSTITUTE

THE AMA's Public Relations Institute in Chicago September 1 and 2 attracted almost 300 state and county medical society representatives. Attending the "crackerbarrel Institute" from Arizona was Mr. Fred Mitten, Executive Secretary, Maricopa County Medical Society.

The Institute, planned primarily for lay executive and PR personnel, M.D. chairman of PR committees, and Auxiliary PR committee women, was the most successful ever held. The two-day meeting featured experts in medical television production, direct mail promotion, AMA services, medical fees, the role of medical assistants, medical motion pictures, and inter-organizational cooperation.

Another meeting, keyed to the public relations needs of individual physicians, will be the AMA's Seventh National Medical Public Relations Conference in Miami at the McAllister hotel, Sunday, November 28 — the day preceding the opening of the Clinical Session. All physicians are invited to participate and to learn how their colleagues have improved medical public relations in their home communities.

MEETING INTER-MOUNTAIN PSYCHIATRIC ASSOCIATION

The Inter-Mountain Psychiatric Association will hold their annual meeting at the Westward Ho Hotel, Phoenix, on Saturday November 6th and Sunday November 7th, 1954. There will be two guest speakers.

Dr. Sandor Rado, from New York City, will present his topic, "Patterns of Depression" on Saturday, November 6 at 2:30 P.M. On Sunday November 7th at 11:00 A.M. Dr. James H. Wall, Medical Director of the New York Hospital will speak on "Cause and Treatment of Psychiatric Patients with Severe Disturbances of Appetite." There will be a Presidential Address by Doctor Otto L. Bendheim, of Phoenix. The Profession is cordially invited. A cocktail hour and dinner will be held Saturday November 6th.

"HEART DISEASE COURSE"

THE Third Annual Western Cardiac Conference, sponsored by the Colorado Heart Association, Colorado State Department of Public Health, Fitzsimmons Army Hospital, Denver Veterans Administration Hospital and the University of Colorado School of Medicine, will be held in Denver, November 8-13, 1954, and is expected to attract about 400 physicians.

This combined conference on "Clinical Electrocardiography and Recent Advances in Cardiovascular Diseases" will be an outstanding medical event for physicians in Western United States. The clinical sessions have been arranged to emphasize every important advancement in diagnosis and management in the field of cardiovascular diseases.

Seven distinguished authorities in cardiology and competent Colorado teachers have been selected to make this an unusually practical review. The following leading specialists will serve as the guest faculty: M. M. Best, M.D., Louisville, Kentucky; William H. Bunn, M.D., Youngstown, Ohio; George C. Griffith, M.D., Pasadena, California; Gordon Myers, M.D., Detroit, Michigan; Myron Prinzmetal, M.D., Beverly Hills, California; Henry Schroeder, M.D., St. Louis, Missouri, and Paul Dudley White, M.D., Boston, Massachusetts.

The three-day Clinical Electrocardiography course, November 8, 9 and 10, 1954 conducted by Colonel Edwin M. Goyette, MC, is being given this year at the Veterans Administration Hospital Auditorium for the convenience of Denver physicians. This comprehensive and practical review is not surpassed in any postgraduate course in this country. Dr. Gordon B. Myers, Professor of Medicine, Wayne University, Detroit, is a superb teacher and will lecture on "Differential Diagnosis of Myocardial Infarction."

The conference on November 11, 12 and 13 will be held at the Cosmopolitan Hotel where lectures, panel discussions and a clinical-pathological conference and scientific exhibits have been arranged.

Information regarding the conference may be obtained from the Colorado Heart Association, 901 East 17th Avenue, telephone — AComa 2-7888.

Woman's AUXILIARY

MENTAL HEALTH

MENTAL illnesses, after many years of being pushed to the back of the closet of human ailments, have at last been brought out for a long overdue airing. True, they are not discussed as nonchalantly as a surgical operation or a virus infection, but the wall of fear and ignorance is gradually being broken down.

It was not many years ago that tuberculosis, cancer, and Hansen's disease were spoken of in hushed voices. Humans, being just that, have always been afraid of the unknown. However, as soon as misconceptions were dispelled, and knowledge replaced ignorance, help and understanding followed.

Making available the present knowledge on mental illness has been a long, slow process. Initiated by the fortunate few who recovered and were released from mental institutions, interest was kindled. Horror at existing conditions for the care of such patients brought on improvements in some instances. More often, though, it was easier to ignore the problem than to do something constructive about it. However, since the turn of the century, as tiny drops of water wear away stone, little by little the public conscience was aroused and many began to flirt with the problem.

Persons with a member of their family afflicted wanted the unembellished facts. Doctors, lawyers, clergymen, and others whose work brought them into close interpersonal relations began to see the importance of mental health and the necessity of treating the mentally ill. World War II brought out amazing statistics and in bringing to light the incidence of mental disease, a certain amount of fear was created. People began to wonder if insanity and mental breakdown were on the increase, simply because they were hearing more about it. It is reported that there is no evidence to substantiate this, save in the older age group. Here, because the life span has been lengthened remarkably, the degenerative mental diseases of old age are more frequent.

We are now being met on all sides by constant reminders that a major problem exists. The author of the psychological novel has capitalized on this interest and the jokes or cartoons involving the psychiatrist's couch are hard to avoid these days. Facetiously or otherwise, we have been made aware of a situation that can no longer be ignored.

Being made aware and informed is our responsibility. It is important to us not only as taxpayers, but as humanitarians to reduce the toll of mental illness and to promote mental health. We must place ourselves in a position where by we can intelligently evaluate the situation, neither exaggerating nor minimizing it. The very possibility that one in twelve may be stricken with mental illness in his lifetime, is fearful indeed. However, earlier diagnosis, a change from mere custodial care to active treatment, and means of prevention lend a large degree of hope to the picture.

Our greatest hope, of course, lies in research. As knowledge is gained and put into practice, progress is made. To date, despite the fact that a good many of the answers are unknown, many improvements have been evinced. An increasing number of former mental patients have become rehabilitated into useful members of society. Specialists in the field are increasing, not only in the ranks of doctors, but psychiatric social workers, nurses, and clinical psychologists. Mental Health organizations have made their services available to thousands, with a good part of this service educational. Child Guidance Clinics have sprung up and it is here that recognition of early tendencies may prove of real value in the prevention of mental illness in years to come.

As a respected leader in your community, knowledge of this medical problem is a must. Keep informed. Keeping pace with the mental health movement is being made easier by the steady flow of information carried in the press. As sympathetic understanding attained, we must keep an open mind to enable us to accept new concepts. Putting into practice in our homes and with our contacts, the knowledge of harmonious human behavior is most practical. The well ordered life of a truly happy person affects all who come in contact with it and benefits both the dispenser and the recipient. Show by your interest and example that mental health can be achieved.

Mrs. John K. Bennett Mental Health Chairman

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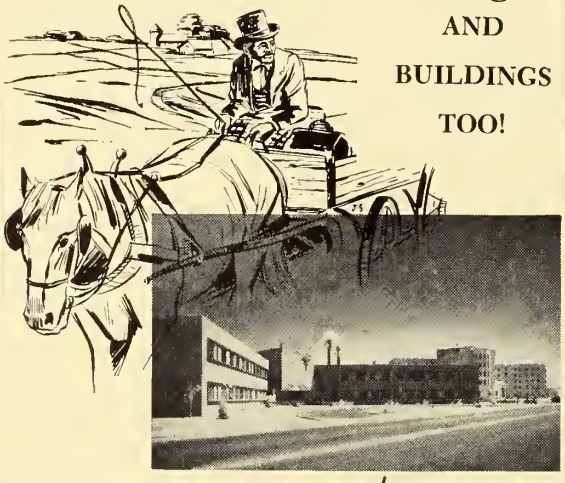
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ARIZONA MEDICINE

Journal of ARIZONA MEDICAL ASSOCIATION

VOL. 11, NO. 11 NOVEMBER, 1954

TABLE OF CONTENTS

OFFICERS

ARIZONA MEDICAL ASSOCIATION, INC., DIRECTORY 6A
WOMAN'S AUXILIARY DIRECTORY 6A

ORIGINAL ARTICLES

A PRELIMINARY REPORT OF CLINICAL STUDIES ON A NEW STIMULANT 397
Robert J. Antos, M.D., Phoenix, Arizona
PROPHYLAXIS OF SURGICAL KELOIDS 399
Jules Leonard Whitehill, M.D., Tucson, Arizona
ROENTGEN ASPECTS OF PANCREATIC DISEASE 403
Lester W. Paul, M.D., Madison, Wisconsin

MEDICAL PROBLEMS

PHOENIX CLINICAL CLUB 406
Leslie R. Kober, M.D., Phoenix, Arizona

THE PRESIDENT'S PAGE

COMMITTEES OF THE ARIZONA MEDICAL ASSOCIATION, INC. 418
Oscar W. Thoeny, M.D., President, Arizona Medical Association, Inc.

EDITORIAL

PRAISE WHERE DUE 419

TOPICS OF CURRENT MEDICAL INTEREST

RX., DX., AND DRS. 420
Guillermo Osler, M.D.
PHS PLANNING ON INDIAN MEDICAL CARE BUDGET 416
HOUSE COMMITTEE APPLAUDS SHIFT OF INDIAN MEDICAL PROGRAM 416
AMEF NEARS ONE MILLION MARK 419
NOTES FROM THE EDITORS PEN 423
HORSE AND BUGGY DOCTOR HONORED 424
YAVAPAI GOES TO THE FAIR 425
ANNUAL MEETING SCIENTIFIC SESSIONS 426
ANNOUNCEMENT AMERICAN BOARD OF PHYSICAL MEDICINE & REHABILITATION 426
INTERESTING TOPICS — Recommended Reading 427
W. W. Watkins, M.D., Phoenix, Arizona
ARIZONA PHARMACEUTICAL PAGE — Background For Progress 428
Joseph A. Zapotocky, Ph.D., Tucson, Arizona
ORGANIZATION PAGE — Civics 430
Norman A. Ross, M.D., Phoenix, Arizona
THIRD ANNUAL CANCER SEMINAR — ARIZONA DIVISION 431

WOMAN'S AUXILIARY

A JOB TO BE DONE 432
Mrs. L. D. Sprague
PRESIDENT'S REPORTS FROM GILA, MARICOPA, PIMA, YAVAPAI & YUMA COUNTIES 432
Mrs. Clarence Gunter; Mrs. Robert H. Cummings; Mrs. Joseph Kinkade; Mrs. Dorothy Shepard; and Mrs. John F. Stanley.

DIRECTORY

LABORATORIES 29A
DRUGGISTS DIRECTORY 30A
SANATORIUM DIRECTORY 32A
PHYSICIANS DIRECTORY 37A

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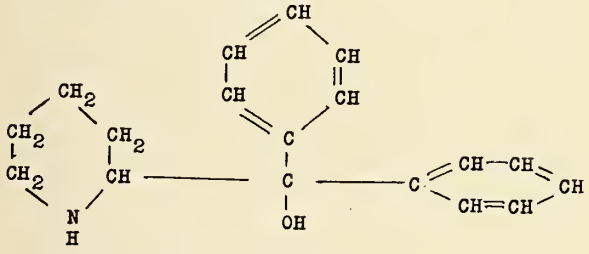
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Original ARTICLES

A PRELIMINARY REPORT OF CLINICAL STUDIES ON A NEW STIMULANT

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THIS is a preliminary report of the studies made using a new stimulant preparation known as Compound MRD-108 or Meratran*. Chemically this substance is not related to the ephedrine or amphetamine compounds, and likewise it has many differences in its action. It has the following structural formula and is named (alpha)-(2-piperidyl) benzhydrol.



The hydrochloride salt is a white odorless powder with a slightly bitter taste. One part dissolves in sixty parts of hot water. For the sake of brevity it is referred to as 108 or PBH.

The toxicity of this compound was determined and compared to that of amphetamine employing the oral, subcutaneous, and intravenous routes of administration in animals. Table I gives the comparative LD_{50} values and standard errors estimated by the method of Miller and Tainter(1). Animals used were rats.

Results indicate that PBH and amphetamine have similar intravenous toxicity, the LD_{50} values being almost identical. Subcutaneously

TABLE I

	Oral	Subcutaneous	Intravenous
	Mg./Kg.	Mg./Kg.	Mg./Kg.
PBH	180±22	240±51	30±1.6
dl-amphetamine	75±6.5	67±7	30±1.8

PBH is only one-third as toxic as amphetamine, and orally it is only one-half as toxic. The intravenous injection of doses below the LD_{50} of both compounds caused hyperexcitability which increased in duration and slgihtly in intensity as the dose was increased. PBH did not cause a subsequent depression which usually followed the activity induced by amphetamine(2).

When the drug was first obtained the only information available was that it was a stimulant to some part of the central nervous system; this was based on animal experiments, and little, if any, had been done on human subjects. The effective human dose was not known. I was my own first subject. Various doses were tried from 0.1 mg. up to 5 mg. at first. Later higher doses were tried. After a few days of hit and miss trials, it was established that the average dose was 1 mg. to 2 mg.

Using 1 mg. as an arbitrary dose the preparation was tried on several voluntary subjects who apparently had no organic disease. Again the effective dose turned out to be 1 mg. to 2 mg. At first only one dose daily was used; then two

*Meratran is the trade name of the Wm. S. Merrell Co. for its brand of Pipradrol.

and three doses daily were tried. The first apparent effect noticed was that this preparation gave relief of fatigue and daytime "let-down" without interfering with sleep, and just as startling was the observation that there was no suppression of appetite, no elevation of blood pressure and no elevation of pulse rate. Table II gives the observations of the control subjects.

TABLE II

Subject	Dose	Appetite Depression	B. P. Change	Pulse Change	Effect on Sleep
1 M.	2 mg. t.i.d. A.C.	None	None	None	None
2 Fe.	1 mg. t.i.d. A.C.	None	None	None	None
3 M.	2 mg.t.i.d. A.C.	None	None	None	None
4 Fe.	1 mg. t.i.d. A.C.	Slight lowering*	None	None	None

In the doses used there were no apparent untoward effects and all subjects noted a "lift" during the day without interference with sleep. None of the subjects had the "hepped up" feeling nor the appetite depression that they all noted with 5 mg. amphetamine. One subject noted a decided relief of the pre-lunch and late afternoon let-down that usually was present. With this little bit of encouragement, it was decided to try this preparation on other conditions which were accompanied by fatigue, drowsiness, or "let-down feeling."

At first the compound was given to patients with various conditions. It was found that the preparation either reduced or removed drowsiness associated with or produced by the following:

1. Chlorpromazine (without decreasing the antiemetic action). Two subjects.
2. Antihistamines. Four subjects.
3. Rauwolfia drugs. Three subjects.
4. Psychogenic fatigue. Five subjects.
5. Coccidioidomycosis. Two subjects.
6. Hepatitis. Three subjects.
7. Hypothyroidism. Two subjects.
8. Post "artificial hibernation" hangover. Two subjects.
9. Alcoholic hangover. Three subjects.
10. Menopausal depression. Four subjects.
11. Dihydrocodeinone (especially useful in children). Three subjects.
12. Bromaleate (used in premenstrual tension). Four subjects.
13. Barbiturates. Two subjects.

In each of the above listed conditions there were at least two patients, often four or five. Because of space limitations, they are presented only in list form. More detailed studies will be published subsequently.

After a few weeks of using the preparation it was realized that it had some unusual therapeutic possibilities. Since it was able to relieve fatigue without the patient being "hopped up" it was thought safe to use in diabetics. It was tried in several diabetics and it did not upset their regulation. In one teen-age "brittle" diabetic, who from previous experience was always seriously unregulated by amphetamine, PBH did not affect the diabetes at all yet gave the "lift" it was supposed to give. In one case of enuresis in an older childl not helped by the "Enurtone" or any other method, 2 mg. of this preparation was given with supper and the lighter sleep induced enabled the youngster to maintain bladder control.

In hypertensive patients PBH was tried on those made drowsy by the rauwolfia compounds. Since it did not elevate the blood pressure of "normal" subjects it was thought safe to try on these patients. It worked beautifully in relieving the drowsiness and did not affect the hypotensive effects of the rauwolfia compounds. One change had to be made in the administration. In those patients who were employing the practice of taking their rauwolfia preparation at bedtime, the new compound was given in the morning on waking, and this procedure worked fine. Some capsules were made up, each containing 1 mg. of PBH or 108 and 2 mg. alseroxylon fraction of rauwolfia. Some of the patients accustomed to taking their medication at night inadvertently did so, and while they did not develop full insomnia, they complained of sleeping lightly. By simply giving the capsules in the morning this difficulty was avoided.

This preparation was also tried on two selected cases of Parkinsonism who did not get any benefit from amphetamine preparations. It did not have any effect on the tremor, but it did relieve drowsiness and apathy.

Several patients who had obtained good relief of premenstrual tension by using bromaleate complained of excessive drowsiness. PBH or

*This could have been psychic. This patient was asked to note if there was any appetite depression. In those subjects not told of appetite effects, no depression was noted.

108 was effective in relieving the drowsiness without producing jitteriness and apprehension like that obtained when amphetamine was used in a similar manner.

By comparing the effects of this compound with other drugs whose action is supposedly known it was first thought this was a pure and simple cortical stimulant, but now it is not so certain. Although there is as yet no laboratory evidence to substantiate this theory, it is felt the action of this compound is that of a stimulant to some hypothalmic nuclei.

SUMMARY: Herewith is presented a brief summary of some clinical studies on a new stimulant type compound that is not related chemically to the ephedrine or amphetamine drugs. Its action is to relieve fatigue and elevate mood, yet it does not elevate blood pressure, raise pulse, depress appetite, or give a "hopped up" type of agitation. Altlhough it produces a lighter sleep if taken late in the day, it apparently does not produce true insomnia like the amphetamines do. There have been under study several control subjects for periods up to thirty-five weeks who took daily doses of this compound of 2 mg. to 12 mg. During this period no disturbance was found in the WBC, RBC, sedimentation rate, hemoglobin, hematocrit, serum proteins, thymol turbidity, blood smears, blood sugar, and no skin rashes were observed.

It is concluded, therefore, that 108 or PBH is a safe drug to use. Especially in those cases where amphetamine preparations would be contraindicated this new compound is safe to use. In the doses used no untoward effects were noted.

REFERENCES

1. Miller, L. C. and Tainter, M. L.: Proc. Soc. Exper. Biol. and Med., 57:261, 1944.
2. Werner, H. W., Brown, B. B., Thompson, C. R., and Smith, J. K.: Unpublished data.

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PROPHYLAXIS OF SURGICAL KELOIDS*

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THE words of Ambroise Pare "I treat, God heals" are as true today as they were in the sixteenth century. Pare, who contributed much to modern concepts of wound treatment, understood clearly that the surgeon's role consisted merely of anatomical apposition of the injured tissues. The actual processes of wound repair which are inherent within the organism were not understood in Pare's time and are still incompletely explained.

The repair of an incised wound (or for that matter any wound) is initiated by complex biochemical and biophysical reactions to substances which are liberated in the wound by lcoal tissue destruction. Locally, this reaction consists in the first twenty-four hours of capillary dilatation, outpouring of transudate into the intercellular spaces and migration into the area of wandering tissue cells and leukocytes. In the next five days there occurs a proliferation of fibroblasts, the laying down of collagenous material by the fibroblasts, proliferation of capillaries and ingrowth of surface epithelium from both edges of the wound. Early wound healing is complete in about one week and a fine pink scar remains. New blood vessels and fibroblasts are gradually squeezed out of the scar by shrinkage of the collagenous material and a white line eventually replaces the pink scar. The essential elements in the healing of deep structures such as connctive tissue, muscle and fascia consist of fibroplasia and deposition of collagen.

Although the factors which initiate wound healing are known, the factors which halt the repair process at the proper time are not understood. Why fibroblasts do not continue to proliferate in the wound and lay down more and more intercellular substance, why epithelium does not continue to grow and why capillaries cease to proliferate at the proper time still remains a mystery As a matter of fact, in certain instances these processes may be over stimulated or the factors which inhibit excessive response no longer operate. An exaggeration of the normal repair process is seen in the development of hypertrophic or keloidal scars.(1).

A keloid results from excessive fribroplasia and from excessive production of collagen. The scar becomes broad and raised underneath its epithelial covering. There is no clear differentiation between a Keloid and a scar which is hypertrophic. These two processes are probab-

*Presented October 5, 1954 at a Staff Meeting of the Tucson Medical Center, Tucson, Arizona.

ly one and the same, the term keloid being applied usually to any markedly hypertrophic scar.

Normal wound healing is dependent upon careful anatomical apposition of the tissues, a good state of nutrition, absence of infection and an adequate systemic supply of vitamins C and B complex. Keloid formation, on the other hand, occurs more f requently in poorly apposed wounds, inflamed wounds, wounds in which there is an accumulation of serum and in wounds which have been exposed to certain types of radiation such as those of the Hiroshima and Nagasaki survivors. The common etiological factor in all such wounds would appear to be an excess of irritant stimuli.

The more frequent occurrence of Keloids in the pigmented races has never been explained. This would appear to be part of a systemic tendency towards increased fibroplasia manifested also by frequency of post-operative intra-abdominal adhesions and increased incidence of fibromyomata of the uterus.[2] Climate plays an unexplained role in the development of Surgical Keloids. All other factors being equal, it is the impression of the author that there is an increased incidence of Keloids in the southwest as opposed to the northeastern portions of the United States. These Keloids occur both on the covered and uncovered surfaces of the body. Higher skin temperature rather than greater solar radiation may explain this phenomenon.

An unsightly keloidal scar often converts an otherwise satisfactory surgical result into a source of embarassment for both patient and surgeon. Itching and burning of the scar frequently add to the discomfort of the patient.

This study in prevention of Surgical Keloids was stimulated by the reported effects of cortisone and ACTH on wound healing and cell growth.(3, 4, 5, 6, 7). Soon after the use of cortisone and ACTH became widespread in the treatment of arthritis and asthma, there were reports of poor wound healing in patients receiving such therapy.(8) Other reports concerned the aggravation and perforation of peptic ulcers and fulminating progression of acute appendicitis in patients receiving these drugs.(9) At the same time, laboratory investigations of the effects of cortisone, hydro-cortisone and ACTH on healing of experimental wounds in animals and on tissue cultures confirmed the inhibition by these drugs of fibroplasia, collagen formation, capillary proliferation and epithelial growth.(3, 10, 13) The reports confirmed impairment in the healing of tendons and of fractures in patients receiving cortisone and like substances.(11, 12) It was apparent that all these phenomena could be explained by the proven effects of hydrocortisone on the processes of inflammation and repair.(13) The inhibition of blood vessel proliferation and dilatation, transudation, leukocytic infiltration, fibroplasia, collagen formation and epithelialization produce favorable responses in the aseptic rheumatic inflammations and dermatoses. Paradoxically, such inhibition is also responsible for retarding the normal defenses which prevent extension of septic inflammatory processes in the abdomen.

These observations lead us to consider the use of hydrocortone for the prevention of keloidal scarring in surgical wounds. It did not seem reasonable to suppose that an already formed Keloid would respond to cortisone or its derivitives, but it did seem possible that the inhibitory effect of these substances on the formation of fibrous tissue might be of use prophylactically. A number of considerations prompted the use of hydrocortone rather than cortisone.**

Hydrocortone is frequently effective in the treatment of dermatoses when cortisone is ineffective.

Weight for weight hydrocortone is more effective than cortisone when administered systemically. The latter probably acts by partial conversion to hydrocortone within the organism.

Subsequent review of the literature revealed a number of instances in which cortisone was applied locally or injected subcutaneously in the region of wounds with a view toward prevention of recurrence of excised Keloids. These reports indicated that cortisone was not effective or was questionably effective locally.(14, 15, 16, 17).

Method:

A series of 115 surgical cases from the private service of the author are reported herewith. These consisted chiefly of abdominal operations. No wounds were used which were less than two inches in length and exposed wounds were

**The material for these investigations was kindly supplied in the form of Cortef ointment by the Upjohn Corporation and the investigation was aided by a grant from the Upjohn Corporation.

avoided for cosmetic reasons. All have been observed for one to nine months.

At the termination of each surgical procedure, after the skin sutures has been completed, a liberal layer of hydrocortone (Cortef) ointment about one inch wide was applied to the lower half of the wound. The ointment was supplied in a water soluble base, surgically clean but not sterilized. The entire wound was then covered with a layer of vaseline gauze to prevent absorption of the ointment into the gauze dressings. In the first fifty cases a 1% hydrocortone (Cortef) ointment was used. In the remainder of the series a 2½% ointment was used. The method of wound closure in most cases consisted of chromic catgut for the deeper layers, plain catgut for the subcutaneous tissues and fine vertical mattress sutures of plain silk for the skin. In a few cases buried figure of eight steel wire sutures were used for the abdominal wall; and in herniaplasties all-silk technique was used. The actual method of closure seemed to make no difference in the end results. In all cases only one application of the ointment was made. This ointment and the vaseline gauze were left in situ until the seventh post-poerative day.

Results:

At the end of one week, at the time of removal of the skin sutures, there was a definite difference in the treated and untreated halves of all wounds. The slight erythema which ordinarily surrounds each skin suture was completely absent in the treated half of the wound. In addition there was less edema in the treated half as evidenced by a greater looseness of the skin stitches. These changes indicated a reduced inflammatory response in the treated portions of the wounds.

In the series of 115 cases, 8 wounds developed a scar which was sufficiently hypertrophic to be classified at a Keloid. In each of the 8 cases the Keloid was entirely or largely confined to the upper or untreated half of the wound, the lower or treated half being free from such change. In 2 of the 8 cases the Keloid stopped

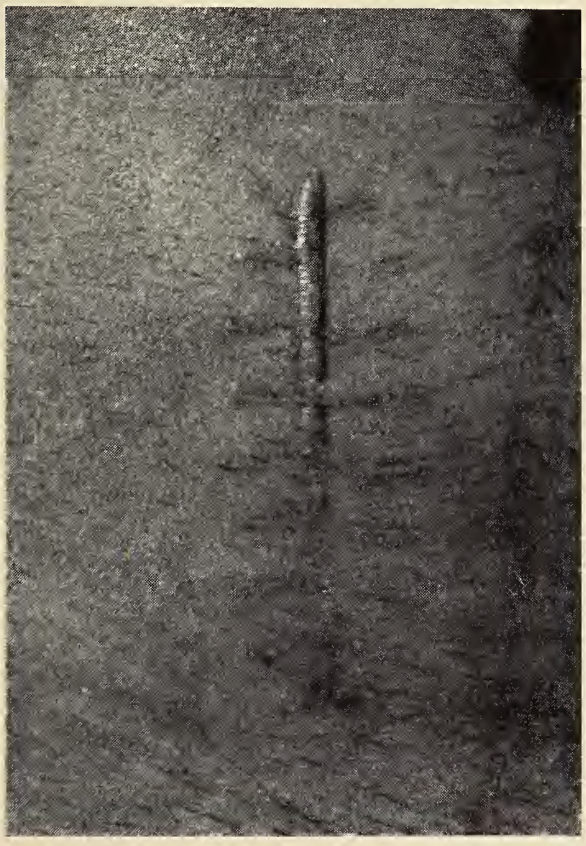


Fig. 1. Example of Keloid of upper (untreated) half of appendectomy wound. The Keloid ends abruptly at the center of the wound and is absent in the lower (treated) half. The Keloid was present six weeks postoperatively and is unchanged after nine months.

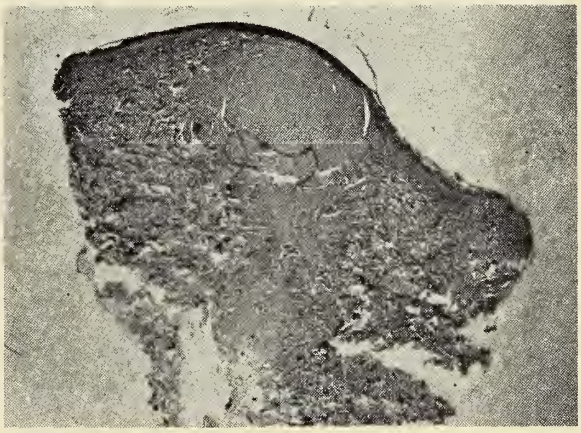


Fig. 2. Microscopic section through upper (untreated) half of scar excised by a second stage Whipple operation. Note Keloid formation.

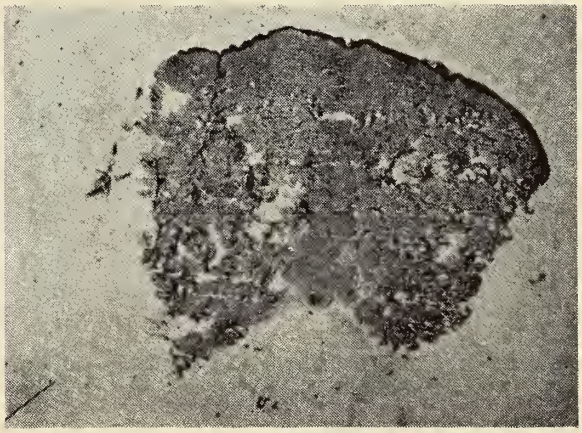


Fig. 3. Microscopic section through lower (treated) half of same scar as in Fig. 2. Note absence of Keloid.

abruptly in the center of the wound. These 2 cases were early in the series when vaseline gauze was placed over the lower half of the wound only, thus sharply delimiting the ointment. In 4 of the 8 cases there was a transition in the center of the wound from a thick Keloid above to a complete absence of Keloid below. In 2 cases the lower half of the wound was not completely free from Keloid, there being a fine Keloid as oposed to a heavier Keloid within the upper half. One of these was a case of gastric resection for bleeding duodenal ulcer at four months of pregnancy. The patient went to term. It is well known that keloidal tendencies are markedly aggravated during pregnancy.

Conclusions:

A series of 115 surgical cases is reported herewith in which one half of the surgical wound was treated at the completion of surgery with a single application of hydrocortone. The healing process in the treated portions of the wounds was more benign with less evidence of post operative inflammatory reaction in the treated segments. Eight cases of Keloids developed in this series. In 6 there was a complete inhibition of keloid formation in the treated segments of the wounds and in 2 cases there was partial inhibition of keloidal formation. One of the 8 cases was reoperated upon with excision of the scar and the same sequence of events reoccurred after treating the second wound in like manner. A Keloid resulting from excision of a sebaceous cyst not previously treated with hydrocortone was excised. After treatment with hydrocortone ointment this Keloid has not recurred. No evidence of wound weakness, infection or other untoward reaction occurred in this series.

Further investigations are in progress. On the basis of the current series, it would appear that post operative surgical Keloids can be prevented by application of hydrocortone ointment to the wound at the time of completion of surgery. It is recommended that such prophylaxis be made routine in the exposed areas of the body and in patients with a known keloidal tendency.

BIBLIOGRAPHY

1. Zur Frage der Keloidenstehung (Pathogenesis of Keloids) Hofs. W. Derm Wschr. 125:17, 1952.
2. Daily Urinary 17 Ketosteroid Output of African Negroes. N. A. Barmicot and Davida Wolffson. Lancet 262:893. 1952.
3. The effect of ACTH and Cortisone on Connective Tissue. Ragan, Charles et al Bull. N.Y. Acad. Med. 26:251-254. April, '50.
4. Biologic Properties of Cortison: A Review. D. J. Ingle. L. Clin. Endocrinology. 10:1312. Oct. 1950.
5. Beneficial Effects of Vitamin B-12 and Aureomycin in Rats given large doses of Cortison. Meites J. Proc. Exp. Biol. and Med. 81:307-311. Oct. 1952.
6. Comparative Antifibromatogenic Action of Cortical Steroids. Lipschutz, Mardones, Inglesias, Fuenzalida and Bruzzone. Science 116:448-452. Oct. 24, 1952.
7. Inflammation and its Control: a biochemical approach. Unger. Lancet 2:742-746. Oct. 18, '52.
8. The Use and Abuse of Cortisone in Surgery. Slocumb and Lundy. S. Clin. N. America 1105-1107. Aug. '52.
9. Cortisone and Corticotropin — a review. Harnagel. California Med. 79:394-401. Nov. '53.
10. Cortisone on Oxygen Consumption of Granulation Tissue from the Rabbit. Scarpelli, Knouff and Angerer. Proc. Soc. Exp. Biol. & Med. 84:94-96. Oct. '53.
11. Effect of Cortisone on the Healing Process and Tensile Strength of Tendons. Wrenn, Goldner and Markee. J. Bone and Joint Surg. 36 A:No.3, 588-601. June '54.
12. Effect of Cortisone on the Regeneration of Skeletal Muscle after Injury. Sissons and Hadfield. J. Bone and Joint Surg. 35 B: 125, 1953.
13. Mechanism of Suppression of Inflammation by Compound F Menkin. Federation Proc. 12:96. Mar. 1953.
14. Cortisone as an Adjunct to Surgery in the Treatment of Keloids. Clarkson P. Lancet. 1:19. May 9, '53.
15. ACTH and Cortisone in the Treatment of Keloids. F. Ronchese and A. B. Kern. New England J. Med. 250:238-240. Feb. 11, 1954.
16. ACTH in Plastic Surgery. Conway. Plastic and Reconstructive Surg. 8:354. 1951.
17. Effect of Cortisone on Wound Healing. De Kleine. Plastic and Reconstructive Surg. 9:473. 1952.

ROENTGEN ASPECTS OF PANCREATIC DISEASE *

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Examination of the pancreas remains one of the least satisfactory of the roentgen studies of the abdominal viscera. To date no method has been devised to render the organ radiopaque, or at least none which can be applied readily by the average roentgen department. The pancreas, situated as it is in the retroperitoneal area, without a fatty capsule to render its borders distinct, cannot be visualized by ordinary roentgen technique. The roentgenologist, therefore, must depend upon the changes which pancreatic disease may cause in adjacent structures, particularly the stomach and duodenum, and to a lesser extent upon alterations in motility of the small intestine. Only when abnormal calcific deposits are formed within the gland or its ducts is there direct roentgen evidence of disease. In the majority of instances some degree of enlargement of the gland, either by inflammation or tumor, must take place in order that roentgen signs may be produced. It follows that differentiation between malignant tumors and inflammatory enlargements must, at times, be impossible to make; also that other masses in the immediate vicinity of the pancreas such as enlarged retroperitoneal lymph nodes may simulate pancreatic enlargement.

In spite of all of these drawbacks roentgen examination does play a part in the diagnosis of pancreatic disease. Occasionally the roentgenologist may be the first to draw attention to the possibility that pancreatic disease exists and thus alert his clinical colleagues to the need for particular study in this field.

Acute Pancreatitis

Some degree of ileus is likely to be present during an attack of acute pancreatitis, manifested by abnormal accumulations of gas in the small intestine and colon. Gas distention of a single loop of jejunum, the so-called "sentinel loop", has been reported as a significant finding in acute pancreatitis(3). Such a finding has also been described as occurring in other localized acute inflammatory conditions within the abdomen such as acute cholecystitis and appendicitis and is, therefore, not specific. Localized gas distention of the transverse colon or the splenic flexure area of the colon also has been noted in acute pancreatitis. In our experience such signs have been too non-specific to be of much aid. Even when generalized ileus is present it may be due to a number of causes and cannot be regarded as a diagnostic sign of acute pancreatitis. Localized gas distention of a segment of bowel always suggests the possibility of an acute inflammatory lesion in the vicinity but the roentgen findings must be carefully correlated with the clinical observations before any definite conclusions can be drawn. Other findings have been reported as suggestive of acute pancreatitis including stasis and spasm of the duodenum, and enlargement of the duodenal loop but these are of questionable value unless correlated with the clinical signs.

Pancreatic lithiasis

Perhaps the most striking roentgen evidence of pancreatic disease is offered in those cases where calcific concretions can be demonstrated within the pancreas or its ducts. That this condition is not uncommon is indicated by the fact that Lemmer and Schmidt(5) were able to collect 40 cases at the University Hospitals seen during a 15 year period. The roentgen signs of pancreatic lithiasis vary from the demonstration of a few small calcific deposits to widespread calcification throughout much of the gland. The calcifications are prone to occur in the head of the gland and when few in number are likely to be found in this region. Thus they may be overlooked in routine postero-anterior projections of the abdomen since the head of the pancreas overlies the lumbar spine and the small calculi are readily obscured by the density of the spine. Because of this it is our custom when searching for such stones to make the roentgenograms with the patient in a slightly oblique postiion. This projects the pancreatic head area to one side of the spine. If suspicious shadows are visualized a barium meal is given and the relation of the califications to the duodenal loop studied. In this manner it usually is possible to localize the shadows satisfactorily and be reasonably certain of their nature. When the calculi are numerous there is usually little doubt as to the nature of the process since the character of the

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shadows and their distribution are generally quite diagnostic.

Enlargement of the pancreas

Enlargement of the pancreas can result either from inflammation or neoplasm. In most cases the differentiation cannot be made from roentgen evidence alone. Exceptions occur when a carcinoma of the pancreas invades the stomach or duodenum, in which event the signs of malignant disease may be obvious. Otherwise the roentgen changes are dependent upon pressure on and displacement of the stomach or duodenum, evidence of a dilated common bile duct, or alterations in motility of the small bowel(1, 4, 6).

1. Enlargement of the duodenal loop. — Since the duodenum surrounds the head of the pancreas any appreciable enlargement of the head may cause the duodenal loop to assume an enlarged and rounded curve. This sign has long been described as one of the important roentgen features of pancreatic enlargement. It is of considerable diagnostic value when present but minor to moderate degrees of enlargement are difficult to recognize. The normal curve of the duodenum varies considerably in different individuals. In the presence of obesity it is always quite round and smooth and may actually appear pathologically enlarged since the stomach lies high and transverse. Enlargement of the duodenal loop of pathologic nature should be diagnosed with considerable caution in such individuals.

2. Forward displacement of the stomach. — This is another sign which is difficult to evaluate unless the displacement is of considerable degree. It is best demonstrated with the patient placed in a right lateral position. The normal distance between the posterior surface of the stomach and the anterior border of the spine varies considerably in different persons, and is much influenced by the habitus of the individual. It is wide in obese persons or in others where the stomach is high and transverse in position. A distended colon, the presence of ascites, or a large mass such as an ovarian cyst may cause the retro-gastric space to appear unusually wide. This sign is of limited value, therefore, unless well defined and associated with some of the other findings listed below.

3. Changes in the mucosal pattern of the duodenum. — Perhaps a more significant roentgen observation than enlargement of the duodenal curve or forward displacement of the stomach is the effect of pancreatic enlargement upon the mucosal pattern of the duodenum, particularly the descending portion. The folds may appear unusually thick and rigid. They may be flattened along the inner side and normal on the outer. In the presence of carcinoma actual invasion of the duodenal wall may be demonstrable by loss of the mucosal pattern and irregular nodular protrusions into the duodenal lumen; or constricted stenotic areas may be produced leading to duodenal obstruction. The transverse portion of the duodenum where it passes over the pancreas may show evidence of compression with flattened mucosal folds.

4. The reverse figure 3 sign. — Frostberg(2) called attention to a distinct alteration in the appearance of the inner wall of the descending duodenum in cases of pancreatic enlargement which he described as the reverse or inverted figure 3. The swelling of the pancreas, the result of either inflammation or neoplasm, may cause a bulging of the gland into the duodenal lumen around the papilla of Vater. A smooth filling defect above and below the papilla results resembling a figure 3 in reverse.

5. Evidence of a dilated common bile duct. — Since the common bile duct lies in close relationship to the duodenum, usually crossing just posterior to the junction of the first and second portions, dilatation of the duct may result in a pressure defect on the duodenum. This may be in the form of a band-like compression or flattening or the duodenum, or a sharp angulation of the apex of the duodenal bulb and its continuation into the descending portion. The right lateral position is of value in showing this deformity but it also can be demonstrated frequently in the standard right anterior oblique position. While this sign only indicates obstruction of the distal portion of the common duct its significance in relation to pancreatic disease is obvious. Tumors of the peri-ampullary region are prone to cause dilatation of the common duct early in their course and this may be the only roentgen abnormality that can be demonstrated.

6. The "pad" sign. — This sign, described by Case(1) and recently re-emphasized by Hodes et al(4), is often found when enlargement of the pancreas is present. It is manifested by a localized, smooth, pressure-type of deformity, usually on the inferior surface of the gastric

antrum or duodenal bulb. Occasionally it may be observed along the superior surface of the bulb or antrum since the relationships of the stomach and pancreas need not be constant. Hodes et al point out that the sign is best brought out by having the patient face the top of an upright fluoroscopic table and then tilting the table slowly toward the horizontal position under fluoroscopic observation. Pressure of the spine on the gastric antrum can simulate the pad sign when the patient is prone on the fluoroscopic table but the effect of pressure from an enlarged pancreas will appear before the table has reached a horizontal position. Careful palpation of the abdominal wall with the patient upright also may demonstrate this defect.

7. Ccholecystography in the presence of pancreatic disease. — When the common duct is obstructed and liver function decreased the gallbladder, of course, does not become visualized. Using one of the newer cholecystographic media, such as Telepaque, it is usual to be able to visualize the common duct when good gallbladder function is present. This occurs most frequently during the phase of gallbladder contraction following a fat meal. When the position recommended by Kirklin is used, visualization of the common duct is possible in a very high percentage of cases. In this projection the patient lies on his right side with the film holder placed in front and the roentgen tube behind. The rays are directed horizontally through the body. Recently it has been indicated that early obstruction of the common duct might be recognized in cases where gallbladder function still was adequate(4). This sign may prove to be of considerable value since it now is possible to frequently visualize the common duct during cholecystography.

Summary and Conclusions

1. Roentgenologic demonstration of pancreatic disease, depends, largely, upon the effects of pancreatic enlargement on contiguous structures, particularly the stomach and duodenum.

2. Enlargement of the duodenal loop and forward displacement of the stomach are valuable signs of pancreatic involvement but are difficult of evaluation in many cases.

3. Of greater importance are changes in the mucosal folds of the duodenum, local pressure defects on the duodenum and gastric antrum, and signs of common duct obstruction. These signs usually are not specific for any one disease and may occur with chronic pancreatitis or with neoplasms involving the pancreas, the ampulla, or the common duct. Other masses in the immediate vicinity of the pancreas can produce similar signs.

4. In acute pancreatitis a localized, dilated, gas-filled loop of small intestine may be present in the upper abdomen. In other cases the roentgen signs are only those of generalized paralytic ileus.

5. Pancreatic lithiasis usually gives clear-cut roentgen findings particularly when the calculi are extensive. When few in number the calcifications may be obscured by the vertebrae, in routine films of the abdomen.

BIBLIOGRAPHY

1. Case, J. T.: Roentgenology of pancreatic disease. Amer. J. Roent. 44: 485-518, October 1940.
2. Frostberg, N.: Characteristic duodenal deformity in cases of different kinds of peri-vaterial enlargement of the pancreas. Acta radiol. 19: 164-173, 1938.
3. Grollman, A. 1., Goodman, S. and Fine, A.: Localized paralytic ileus; an early roentgen sign in acute pancreatitis. Surg. Gynec. and Obst. 91: 65-70, July 1950.
4. Hodes, P. J., Pendergrass, E. P. and Winston, N. J.: Pancreatic, ductal, and vaterian neoplasms: Their roentgen manifestations. Radiology 62: 1-15, January 1954.
5. Lemmer, K. E. and Schmidt, E. R.: Pancreatic calcifications. Arch. Surg. 64: 571-577, May 1952.
6. Paul, L. W.: Roentgen diagnosis of carcinoma of the pancreas. Amer. J. Cancer. 28: 720-734, December 1936.

PHOENIX Clinical CLUB

The Case History in this discussion is selected from the Case Records of the Massachusetts General Hospital, and reprinted from the New England Journal of Medicine. The discussant under Differential Diagnosis is a member of the staff of the Massachusetts General Hospital. The other discussants are members of the Phoenix Clinical Club.

MASSACHUSETTS GENERAL HOSPITAL PRESENTATION OF CASE

A fifty-nine-year-old man was admitted to the hospital because of dyspnea and weakness.

One year before admission, after an attack of syncope, the patient was told by his physician that he was anemic and had a high blood pressure. He subsequently became dyspneic, developed nocturia and noted that his face was swollen. He believed that the urine was pink at this time. A few months before admission increasingly severe dyspnea and orthopnea developed, but he noted no chest pain, cough or ankle edema. A few weeks before admission he became very weak so that he was unable to walk, became dyspneic at rest and experienced severe itching.

Twelve years before admission the patient entered another hospital for the removal of a mass in the soft tissue about the right elbow that had been growing for seven years. The mass was diagnosed as osteogenic sarcoma. He refused amputation but received x-ray therapy.

Physical examination revealed a pale, dyspneic man, with many excoriations over the arms and legs. The breath was uremic. No hemorrhages or exudate was seen in the fundi. The chest was clear except for dullness to flatness and diminished tactile fremitus over the left base posteriorly. The size of the heart could not be estimated. The sounds were of good quality. There was slight pitting edema of the hands and feet.

The temperature was 98.6°F., the pulse 88, and the respirations 35. The blood pressure was 200 systolic, 100 diastolic.

The urine had a specific gravity of 1.008 and a pH of 4.5 and gave a 3 plus reaction for albumin; the sediment was loaded with red cells and numerous white cells. Examination of the blood disclosed a hemoglobin of 7 gm. and a white-cell count of 16,000, with 84 per cent neutrophils. The nonprotein nitrogen was 190 mg., the calcium 5.4 mg., and the phosphorus 6.6 mg. per 100 cc.; the carbon dioxide was 10.4 milliequiv. per liter. A roentgenogram of the chest showed a large accumulation of pleural fluid on the left, which extended to the midthorax. A rounded density was observed adjacent to the left hilar region. It measured roughly 4 by 5 cm. and extended to the midlung field. Increased markings, thought to be due to congestive heart failure, were present.

The patient was sedated and given calcium, Amphojel and digitalis. He improved symptomatically, but the blood chemistry findings were altered very slightly. On the fifth hospital day 1050 cc. of yellow, turbid fluid was removed from the left pleural space; this contained 2000 red cells and 250 white cells, mostly lymphocytes, per cubic millimeter, and had a specific gravity of 1.012. A smear was negative for tumor cells. Beginning on the sixth hospital day, occasional generalized convulsions occurred. The serum calcium at this time was 4.9 mg., and the phosphorus 10.7 mg. per 100 cc. The urine remained acid (pH of 5), and the specific gravity remained at 1.008 to 1.010. All specimens of urine examined gave a 2 plus or 3 plus reaction for albumin. After the first specimen was examined no red cells could be identified, and only one other specimen contained a few white cells; casts were infrequently seen. Transitory auricular fibrillation occurred on the sixth hospital day. An x-ray film showed clearing of the lung fields, but the mass remained and contained areas of speckling. Lumbar puncture on the seventh day revealed clear spinal fluid that contained no cells, and had 54 mg. of protein per 100 cc. The convulsions, which he continued to have, were described as beginning on the left side, with diminished reflexes in the left arm and leg. He remained semi-stuporous and died on the nineteenth hospital day.

LESLIE R. KOBER, M.D.

The obvious diagnosis in this case would seem to be Bright's Disease with hypertension, ure-

mia, and death on the 19th day. It goes without saying that such a simple case would not be selected for Clinical Club discussion. The diagnostic problem would seem to center about the tumor mass in the left lung adjacent to the hilar region.

We are given the diagnosis of osteogenic sarcoma of the right elbow for which amputation had been refused 12 years previously. Did x-ray therapy cure this tumor, or is the mass in the lung a metastatic growth? Does the nephritis result from metastases to the kidneys? There seems to be nothing else in this man's history to indicate any other cause for his nephritis, but one cannot rely entirely on a history, which seems to be as brief as this, for an etiological basis for a final diagnosis.

Certainly, the first thought would be that a tumor **removed** 12 years ago and treated with x-ray must have been cured. At least we can say a 5 year cure was obtained. Does this tumor in the lung then represent an entirely different growth? Is the primary site in the kidneys? Were his final Jacksonian type convulsions due to brain metastases?

Now we see why this case was picked for discussion.

Coley and Harrold (J. of Bone and Jont Surg., 32-A, p. 307, April 1950) reported 59 cases of Osteogenic Sarcoma with survival for five years or more, from the Memorial Hospital in New York City. The greatest number of five-year survivals were treated surgically. Of fifty-seven patients with involvement of the long bones, fifty-one had amputation or disarticulation and six had conservative surgery; lesions in five of the six were chondrosarcomata. Two cases of fibrosarcoma were treated by irradiation alone.

The histological type of sarcoma encountered in this group of 59 cases reveals that two-thirds were of fibrosarcoma or chondrosarcoma type. Of the latter, histological examination showed the majority were of relatively low-grade malignancy and had arisen as secondary chondromyxosarcomata from a pre-existing area of cartilage in an abnormal situation.

Five of their cases died of sarcoma after having survived for more than five years, so that they contend this is not a sufficiently long period of time on which to base end results. One patient was ambulatory 15 years after amputation but had a large pulmonary metastasis. Two other cases had lobectomy performed for pulmonary metastases discovered late in the course of the disease. The tumors in both cases were low-grade chondrosarcomata.

We certainly must give sarcoma first place in our case as the primary diagnosis.

My opening statement that the obvious diagnosis is Bright's Disease with hypertension and uremia, however, seems to be well borne out by the clinical and laboratory findings.

I use Bright's Disease to cover all cases of bilateral renal disease. The three major clinical manifestations of chronic vasculo-renal disease are renal insufficiency, hypertension, and the nephrotic syndrome.

In classifying bilateral renal disease I like that given by Pruitt (Classification of Bilateral Renal Disease, Pruitt, Raymond D.; Med. Cl. of N.A., July 1951, P. 959), as follows:

I. Primary glomerular lesions
 - A. Glomerulonephritis
 - B. Intercapillary glomerulosclerosis (Kimmelstiel-Wilson's Disease)
 - C. Amyloid Disease
 - D. Disseminated lupus erythematosus
 - E. Eclampsia.

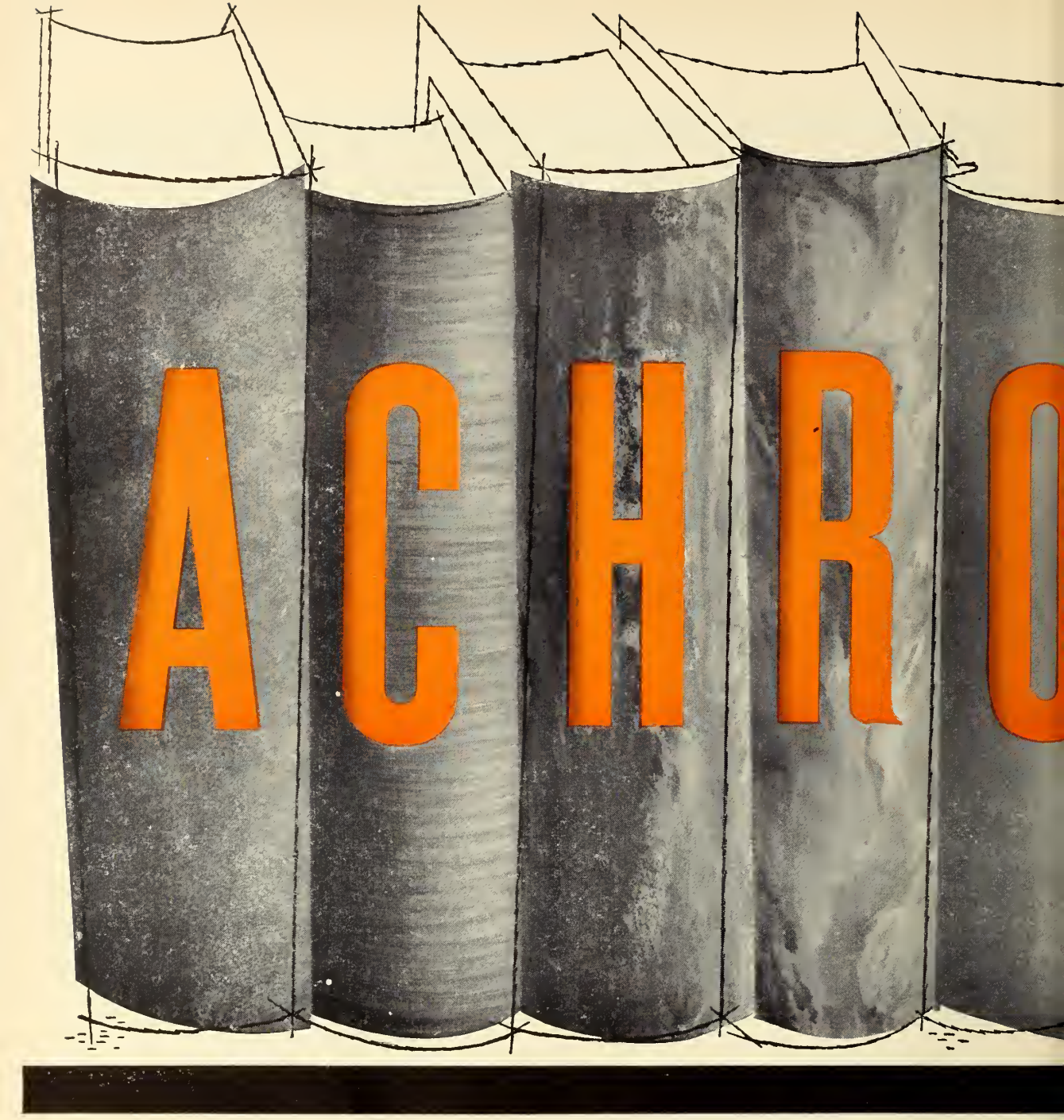
II. Primary vascular lesions.
 - A. Senile arteriosclerotic kidneys
 - B. Periarteritis nodosa
 - C. Diffuse arteriolar disease with hypertension (essential hypertension).

III. Tubular lesions
 - A. Degenerative type secondary to poisonous agent; (for example, mercuric chloride or carbon tetrachloride.)
 - B. Obstructive type
 1. Multiple myeloma
 2. Transfusion reactions
 3. Sulfonamide intoxication.

IV. Chronic Diffuse Nephritis
 - A. Chronic pyelonephritis
 - B. Bilateral hydronephrosis
 - C. Polycystic disease
 - D. Leukemic or lymphoblastomatous infiltration.

V. Secondary renal failure
 - A. Functional renal ischemia
 - B. Renal hypotension
 - C. Dehydration.

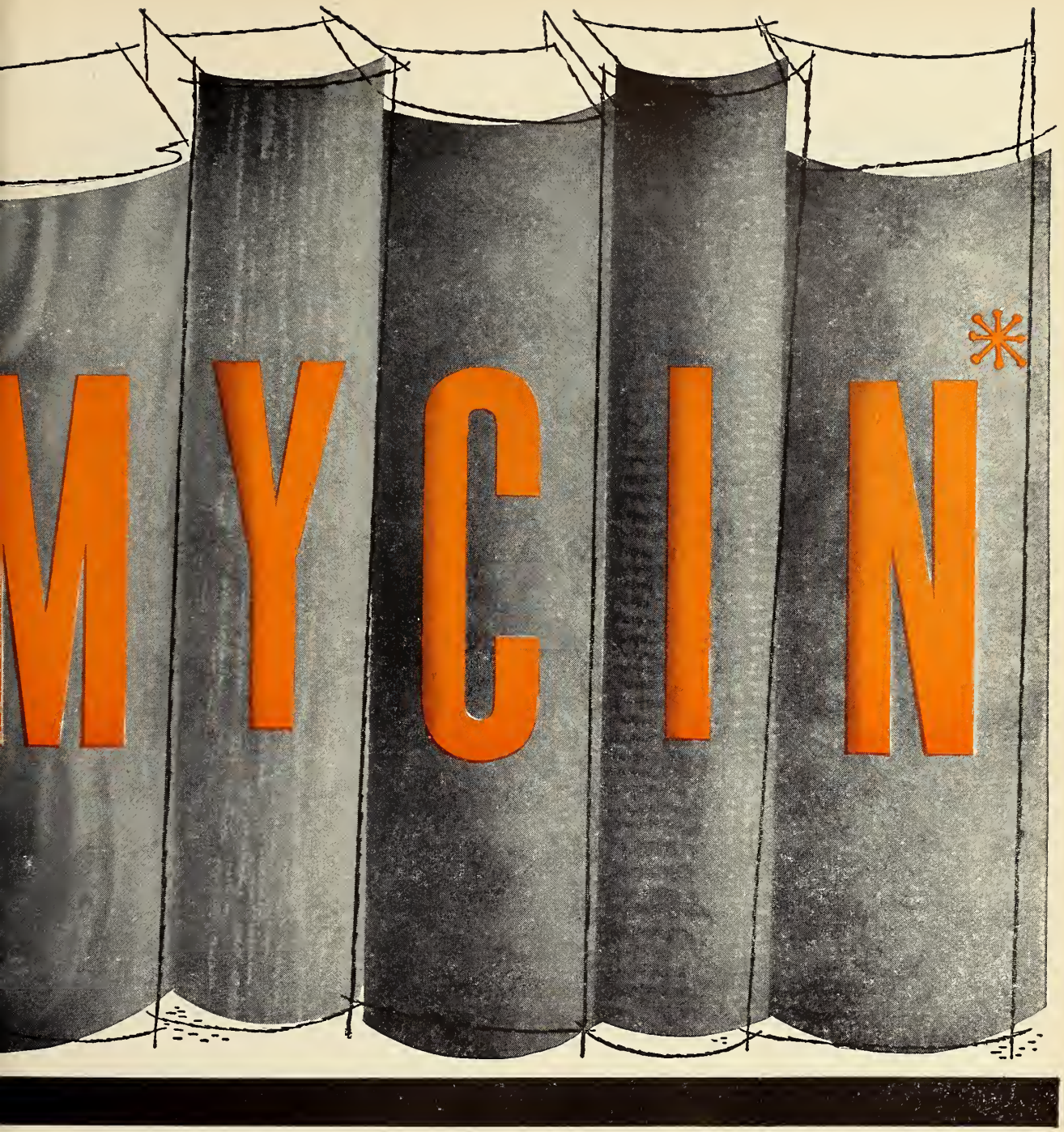
In looking over this list and trying to correlate the clinical findings in our case, we can, I believe, readily eliminate many of the above types of renal disease.



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Those which should be given consideration are Glomerulo-nephritis, Amyloid disease, disseminated lupus erythmatosus, any one of the primary vascular lesions, or any of the obstructive types of renal disease such as occur with myeloma or lympho-blastomatous infiltration.

Azotemia, hypocalcemia, hyperphosphatemia, hematuria and albuminuria without significant retinal changes seems rather unusual in view of the apparent uremia, hypertension, and convulsive seizures.

We are led to wonder about the possibility of a sarcomatous lesion involving the kidneys as well as the lungs. Also the Jacksonian type convulsions seem more likely to be due to metastatic lesion in the brain rather than the edema of terminal uremia.

By the time I get around to discussing the various types of tumors of the lung such as adeno-carcinoma, lymphoblastoma, etc., I am, as you see, pretty well sold that this is not a case of primary lung tumor, and not even a case of primary hypertensive cardio-vascular disease.

I have so well convinced my self that this is a case of delayed metastasis from osteogenic sarcoma that I am going to cut out the rest of a lengthy discussion and say:

My diagnosis is:

(1) Osteogenic sarcoma probably chondrosarcoma with metastases to kidney, lung and brain, or

(2) Cured osteogenic sarcoma with lymphomatous tumor in lung and secondary Glomerulo-nephritis, hypertension and uremia.

DIFFERENTIAL DIAGNOSIS

DR. RITA M. KELLEY: May I see the x-ray films?

DR. WILLIAM R. EYLER: We have two sets of chest films taken five days apart. In the antero-posterior film taken with the patient lying in bed, there is a good-sized collection of fluid obscuring the left lower portion of the chest. The mass described in the protocol is seen in the upper lobe lying close to the lung root, I think, and away from the bronchus. There is a collection of small calcifications, but in the lateral view I cannot be certain that the calcifications are not super-imposed on the lesion. I think the left lower lobe is somewhat reduced in size. I cannot exclude the possibility of a primary lung tumor. A metastasis from a kidney might give this appearance.

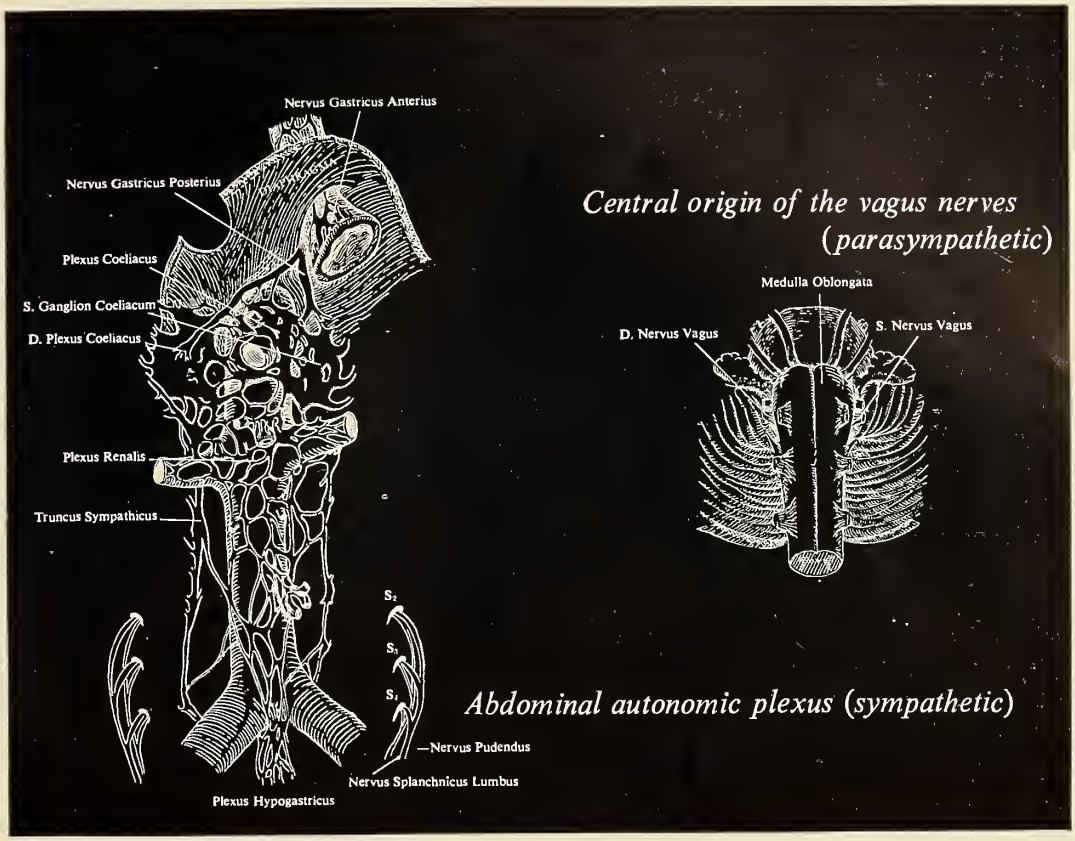
The bones show fairly marked degenerative changes. There is some wedging of the thoracic bodies but no bone destruction. The changes could be on the basis of osteoporosis. In later films made with the patient in a sitting position the mass is again seen, the heart is enlarged with nonspecific configuration, the aorta is elongated, and fluid again obscures the left lower portion of the chest.

In the abdominal films, the left kidney, I believe, is small. I cannot trace the right kidney. The spleen is probably not enlarged; its right lobe is below the costal margin. The diaphragm is fairly low. There is not bone destruction. The films are of a poor quality so I am sure I could miss an abdominal mass.

DR. KELLEY: This fifty-nine-year-old-man entered the hospital in a terminal state, bearing the stigmas of two major pathologic processes; renal disease and a mass in the chest, along with the history of a malignant tumor that commonly metastasizes to the lungs. I think the two are unrelated and should like to discuss the former first as the likeliest cause of death.

This patient died manifesting most of the classically described signs of advanced uremia of fairly long standing; hypertension, anemia, edema, pruritus, convulsions, urine of fixed specific gravity, albuminuria, hematuria, elevated nonprotein nitrogen, hyperphosphatemia, hypocalcemia and acidosis. The pleural effusion may have been a consequence of uremia with congestive heart failure or of the independent pulmonary disease. The one discordant note in the uremic picture is the absence of obvious alteration in the fundi. I should like to think they were not adequately visualized because of narrowness or fixation of pupils, but I have no way of knowing whether this was so. In any event, while unusual, this isolated negative finding cannot detract significantly from the remainder of the clinical and laboratory picture. There was good circumstantial evidence that the process had been evolving for considerably longer than one year prior to his death, in that anemia, hypertension, nocturia, facial edema and probably hematuria were present at that time.

There come to mind four major entities that can produce in their terminal phases the nonspecific uremic syndrome. When the patient is seen for the first time already enmeshed in the throes of irreversible uremia, the precipi-



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1. Zupko, A. G.: Pharmacology and the General Practitioner, GP 7:55 (March) 1953.

2. McHardy, G. G., and Others: Clinical Evaluation of Methantheline (Banthine) Bromide in Gastroenterology, J.A.M.A. *147*:1620 (Dec. 22) 1951.

tation process can be surmised only in retrospect and only provided an adequate history is available. These four conditions are hydronephrosis and pyonephrosis causing an obstruction, with gradual destruction of the renal parenchyma; long-standing pyelonephritis; arteriolar nephrosclerosis secondary to malignant hypertension; and chronic glomerulonephritis.

The first of these is possible, perhaps, on the basis of pelvic carcinoma with obstruction of the ureters. Such a lesion might be related to the pulmonary mass and one could even postulate cerebral metastases resulting in convulsions with some localizing signs. However, it is very unlikely that such advanced pelvic disease could be present for more than a year without causing death or at least other evidence of an advancing malignant process. I have no reason to suspect more benign causes of obstruction. One small point against this type of renal destruction is the fact that the one kidney shadow discerned by Dr. Eyler is believed to have been small. I might expect an enlargement of the kidneys behind a total obstruction.

Chronic pyelonephritis is a more difficult possibility to discard. I have no real evidence for or against it. Evidence of active infection need not persist into the end-stage of chronic pyelonephritis. The patient did show few to numerous white cells in various specimens, but this can occur in advanced renal disease whatever its etiology. Without a past history suggestive of acute pyelonephritis, I can say only that a burned out chronic pyelonephritis is a possibility but is less likely than one of the two remaining categories.

In a recent article, Saphir and Taylor present evidence that the renal lesion in so-called malignant hypertension is most commonly a diffuse chronic pyelonephritis rather than the classic arteriolar nephrosclerosis usually described in conjunction with this syndrome. Did this man have malignant hypertension leading to one or the other of these pathologic entities? Or did he have the fourth of my original list, chronic glomerulonephritis? Again, the history is not too helpful in reconstructing the initial phases of the disease. Statistically, the age of the patient is somewhat against either of these diagnoses, since both malignant hypertension and chronic nephritis usually lead to death before the fifth decade. Nevertheless, individual patients do survive much longer, and cases in clinicopathological conferences rarely conform to statistics. The episode that this patient experienced a year before death, with facial edema, nocturia and hematuria, is a little more suggestive of chronic glomerulonephritis than that of nephrosclerosis. I do not know the level of the blood pressure at that time, but a single reading in the terminal episode was 200 systolic, 100 diastolic. The level is usually maintained at higher readings than this in malignant hypertension, but one can conclude lttile from a single reading. The disappearance of red cells from the urine in the terminal phase is somewhat disturbing; continued microscopic hematuria is commonly seen in chronic nephritis, but is likely to be intermittent in nephrosclerosis or in Saphir's pyelonephritis lenta. The negative eye grounds, if this finding is valid, are unusual in either condition, but are practically incompatible with the diagnosis of malignant hypertension. Of these possibilities, I favor chronic glomerulonephritis, with convulsions on the basis of uremia and hypocalcemia, rather than hypertensive encephalopathy.

What was the nature of the pulmonary lesion? I cannot conceive of a direct relation between it and the fatal renal disease and must regard it as an incidental finding. Was it related to the pleural effusion? The nature of the effusion does not allow one to classify it unequivaocally as a transudate or an exudate. However, its presence and nature were perfectly compatible with the diagnosis of nephritis and uremia, and it is unnecessary to postulate the existence of a pleural neoplastic process related to the solitary mass.

Such a solitary, calcium-containing lesion may be benign or malignant. If benign, I may choose among the whole gamut of possible "red herrings" that can inhabit this location, perhaps a cyst with a calcified wall or a tuberculoma as the leading contender. If malignant and calcium containing, it is more likely to have been metastatic than primary. Rather than make a third independent diagnosis in the presence of primary renal disease and a history of a malignant bone tumor, it seems reasonable to relate this mass to the previous tumor. This is said to have been an osteogenic sarcoma. Its history is quite unusual for an osteogenic sarcoma. This bone tumor is a highly malignant



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one, commonly occurs in a younger age group unless associated with Paget's disease or as a result of malignant changes occurring in a previously benign chondroma, which may have occurred in the case under discussion. The presence of pain usually causes the patient to seek medical aid long before seven years have passed. The lesion metastasizes early. The type of treatment given this man was totally inadequate to deal with a tumor of this nature. Osteogenic sarcomas are not radiosensitive and local excision is hardly the treatment of choice for a lesion whose five-year survival rate, even when treated with amputation, is less than 20 per cent. Nevertheless, there are types of osteogenic sarcoma of the sclerosing, fibrous and cartilaginous forms that are more indolent, less malignant and less painful than the commoner, more anaplastic type. Such lesions have been known to produce pulmonary metastases as late as fifteen years after removal of the primary tumor. Such delayed metastases are often solitary and frequently show flecks of calcium. I shall therefore call the pulmonary lesion metastatic osteogenic sarcoma of a relatively low grade of malignancy. Perhaps recurrent disease will also be found in the region of the original site of the tumor. If so, one might expect an elevated alkaline phosphatase, but I am told this man had a normal value.

In summary, and with the weight of statistics heavily against me, I think the diagnoses are chronic glomerulonephritis, with a pleural effusion on this basis, and metastatic osteogenic sarcoma.

CLINICAL DIAGNOSIS

Generalized neoplastic disease, ?osteogenic sarcoma, ?bronchogenic carcinoma.

DR. KELLEY'S DIAGNOSIS

Chronic glomerulonephritis, with pleural effusion. Metastatic osteogenic sarcoma.

ANATOMICAL DIAGNOSIS

Chronic glomerulonephritis.

Metastatic chondrosarcoma of lung (after 12 years)

Hydrothorax, left.

PATHOLOGICAL DISCUSSION

DR. DAVID KAHN: The post-mortem examination on this patient showed a number of interesting findings. First, Dr. Kelley was quite right about the cause of the renal failure: the patient did have chronic glomerulonephritis. Grossly, the kidneys did not appear as end-stage, small, contracted kidneys but weighed 300 gms. and had only a moderately granular surface and some irregular atrophy of the cortex. However, histologically almost every glomerulus was involved, the changes varying from complete fibrosis of the glomerulus to intercapillary fibrosis with stiffening of the tufts. No completely uninvolved glomeruli were found. An occasional epithelial crescent could still be made out, but there was no other evidence of an acute or active process. There was, of course, a great deal of tubular atrophy with interstitial fibrosis. There was certainly very little normal renal parenchyma left.

The left pleural cavity contained 200 to 300 cc. of fluid. The left lower lobe of the lung was firm and indurated and almost completely replaced by a tumor 7 x 6 x 6 cm. in diameter. There was a narrow rim of lung surrounding the tumor peripherally. The tumor was gray and firm and contained a few gritty areas of calcification. There was an extension of the tumor along the inferior pulmonary vein into the left atruim. There was a second separate tumor mass 4 x 3 x 3 cm. in diameter in the lingula of the left upper lobe quite close to the hilus. When sections of the tumor were compared with the sections of the tumor removed from the region of the elbow twelve years before, it was evident that in certain areas they were almost identical; there is no doubt that the lung tumors were metastases. Definite classification of this tumor is somewhat difficult. At the operation the tumor was extraosseous, with no connection to bone, but appeared to arise from a fascial sheath with no capsule or other sharp line of demarcation from the surrounding muscle that it had infiltrated. At post-mortem examination, except for the scar, nothing was found in the elbow at the site of the original tumor. When we reviewed the original sections shortly after the patient was admitted, we believed that malignant synovioma was most compatible with the histology, position and clinical course. When we examined sections from the tumor in the lung it became evident that one of the cardinal features was cartilage formation. The tumor was composed of cords and strands of small undifferentiated polygonal cells, which were divided by bands of hyaline material that in many areas took on the staining quality of cartilage. In other areas there were large clumps of poorly formed but



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easily recognizable cartilage and an occasional band of poorly formed osteoid that in some areas was calcified. The cartilage appeared to be definitely neoplastic and not metaplastic. We think this tumor should be classified as a chondrosarcoma with metaplastic bone formation certainly, its growth pattern with the slow course, massive lung metastases and invasion of the pulmonary veins and left atrium are what is often seen with a chondrosarcoma. Others might consider osteogenic sarcoma, chondrosarcoma type, a better name. Recently, we have seen 2 other cases of bone tumors with somewhat similar histology, one with multiple bone lesions and the other with a solitary lesion in the wrist. Both these patients had only local treatment with local recurrences twelve and fifteen years later, and the question arises, "What should now be done for these patients" The recognition of this group of tumors if possible, is therefor of more than academic interest. We did not have permission to examine the brain in the case under discussion; with the tumor growing into the left auricle a tumor embolus is certainly a possibility. The heart was hypertrophied, weighing 590 gm., and the liver showed an incidental portal cirrhosis.

PHS-INTERIOR WORKING ON INDIAN MEDICAL CARE BUDGET

How much Public Health Service will be allowed to ask of Congress to finance the Indian medical care program next fiscal year will be determined by the Budget Bureau on the basis of information now being supplied by PHS and the Indian Bureau.

At the start of the next fiscal year, July 1, 1955, PHS takes over from the Indian Bureau responsibility for the medical care in the reservations. The Indian Bureau has $22 million for medical care this year; presumably PHS, which expects to put some more trained health personnel into the program, will be allowed substantially more. Meanwhile, Public Health Service is continuing its study of Indian Hospitals and the need for improvements.

Dr. Van M. Hoge, Assistant Surgeon General, is in charge of this survey, as well as the liaison work with the Department of the Interior and the conferences with the Budget Bureau. Dr. Hoge emphasizes that all physicians and other health personnel working for the Indian Bureau will be retained. A recruitment campaign now is under way to obtain more physicians to work for PHS on the reservations.

—AMA Washington Letter.

HOUSE COMMITTEE APPLAUDS SHIFT OF INDIAN MEDICAL PROGRAM

A report by the counsel for the House Interior and Insular Affairs Committee, which has just been released, reviews the Indian medical care problem and notes the improvements to be expected when Public Health Service takes over responsibility for Indian hospitals next July 1.

George W. Abbott, counsel for the committee, said the transfer of the Indian medical program from the Indian Bureau in the Department of Interior to Public Health Service in the Department of Health, Education, and Welfare will:

1. Substantially overcome "gradually worsening" personnel limitations of the Bureau's health service.
2. Substitute a purely medical agency (Public Health Service) for the basically nonmedical Bureau of Indian Affairs.
3. Encourage closer cooperation between federal and state health agencies in effecting transfer to states and local or private agencies of responsibility for supplying Indian health services.

Mr. Abbott stated that more than 25 per cent of Indian Bureau employees (3,270) were assigned to health matters. In view of the change, he noted that the Bureau's budget should show a "substantial reduction" next year. A sub-committee which has been studying all Indian problems meanwhile complained of the "free loaders" or "professional Indians" who have been benefiting from medical and other services "under the guise of incompetent Indians." The subcommittee indicated it hopes that Public Health Service will be able to draw "rather tighter lines" of eligibility to comb out the "free loaders". —AMA Washington Letter

INFECTIOUS MONONUCLEOSIS, a 2 minute Abstract

CLINICAL ASPECTS:

1. Posterior cervical adenopathy.
2. Pharyngitis.
3. Occasional white tonsillar exudate.
4. Febrile onset, with headache and malaise.
5. Nausea, vomiting, occasional abdominal pain.
6. Drowsiness is n occasional symptom.
7. Occasionally a maculo-papular or "rose" rash.
8. Splenic enlargement is noted in 50% or more cases. Rupture of the spleen has been reported.
9. Hepatitis with jaundice is a frequent finding.
10. CNS findings may be meningitis, encephalitis or neuritis.
11. Clinical evidence of cardiac involvement has been reported.

DIAGNOSTIC ASPECTS:

1. Leukopenia with a normal differential is noted early in the disease, with leukocytosis due to relative increase in the lymphocyte count, noted after the 14th to 16th day.
2. Blood smears at about the 10th day will reveal many "Downey cells."
3. Significant heterophile agglutination titers will be evidenced about the 10th day.
4. False positive Wasserman or other serological tests have been reported but found to be transient.
5. Urinalysis may show transient albuminuria.
6. The spinal fluid may show an increase in lymphocytes and total protein.
7. Liver involvement may be ascertained by changes in the protein pattern, (Electrophoresis), Thymol Turbidity, and Cephalin Flocculation or Bromsulphonphthalein excretion.

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THE *President's* PAGE

COMMITTEES OF THE ARIZONA MEDICAL ASSN., INC.

THE COMMITTEES OF THE ARIZONA MEDICAL ASSOCIATION, INC., HAVE MANY ACTIVITIES AND THESE REQUIRE A GREAT DEAL OF WORK, BOTH BY THE EXECUTIVE SECRETARY AND HIS STAFF, AND BY MEMBERS OF THE ASSOCIATION WHO HAVE ACCEPTED APPOINTMENT TO THE VARIOUS COMMITTEES. IT MIGHT SURPRISE SOME OF YOU TO KNOW THAT THE MEMBERSHIP OF THE VARIOUS STANDING AND SPECIAL COMMITTEES TOTALS ONE HUNDRED AND FORTY. A VERY FEW OF THESE COMMITTEES HAVE DUTIES THAT REQUIRE ONLY A MINIMUM OF TIME, BUT MOST ARE EXTREMELY ACTIVE AND ASK OF THEIR MEMBERSHIP MANY DAYS OF EFFORT AND TRAVEL. IT WOULD BE ENLIGHTENING TO THE MEMBERSHIP OF THE ASSOCIATION, IF THEY COULD ATTEND THE MEETINGS OF SOME OF THESE COMMITTEES, TO SEE HOW EARNEST AND CONSCIENTIOUS THEIR WORK IS. MANY OF THE MEMBERS HAVE COME TO PHOENIX OR TUCSON FROM DISTANT PORTIONS OF THE STATE AT THEIR OWN EXPENSE AND AT THE EXPENSE OF A DAY OF FREE TIME. WHEN WE CONSIDER THE FACT THAT MANY OF THESE COMMITTEE MEMBERS ARE ALSO VERY ACTIVE IN ORGANIZED MEDICINE ON A COUNTY LEVEL, WE BEGIN TO SEE HOW MUCH SACRIFICE THEY ARE ACTUALLY MAKING. IT IS HOPED, HOWEVER, THAT THE FEELING OF A TASK WELL DONE COMPENSATES FOR THE EFFORT EXPENDED BY EACH MEMBER OF THE COMMITTEE. THE ASSOCIATION CAN CERTAINLY THANK EACH ONE OF THEM.

OSCAR W. THOENY, M.D.

PRESIDENT, ARIZONA MEDICAL ASSN., INC.

Editorial

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The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good Englisb, especially with regard to construction, diction, spelling, and punctuation.
2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. (See MEDICAL WRITING by Morris Fishbein).
3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.
4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.
5. Submit manuscript typewritten and double-spaced.
6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.

The Editor is always ready, willing, and happy to help in any way possible

PRAISE WHERE DUE

LIFE is replete with examples of misdirected praise. It is common knowledge, that although it is the star of the play who gets his name in lights and gets all the press notices, that in reality the number of behind-the-scene workers who attend to the laborious details in connection with the play are in very large part responsible for its success. Yet this army of "forgotten men" labor silently and unobtrusively, never participating in the blaze of publicity and praise, and seldom complaining at the lack of it.

This illustration is applicable in principle to almost every enterprise in the world today. One sees it at work in governments, in business, and even in churches and families. This publication is no exception.

It is refreshing and gratifying, therefore, to have the work of our very good business manager and publisher recognized. In a recent letter, the past president and present historian of the Woman's Auxiliary of the A.M.A., Mrs. Clarice H. Hamer, has accorded him high and well-deserved praise. She has very kindly passed on favorable comments from other Auxiliary members concerning our Journal and its cooperation with the Auxiliary work. She has pointed out with gratitude his part in this cooperation.

We heartily join Mrs. Hamer in this salute to Mr. McMeekin and his tireless efforts in behalf of our Journal. Furthermore, we extend our thanks to the many others who work constantly and without praise; our state secretary and his aides, our own secretaries, Mr. McMeekin's secretary, the printers, our contributors, and our associate editors, to name only a few. Not one of these could we do without.

Again we thank you all, and thank you, Mrs. Hamer, for bringing this matter to mind.

AMEF NEARS ONE MILLION MARK

SEVERAL large contributions from state medical associations have boosted the American Medical Education Foundation nearer to its goal of two million dollars in 1954. The California Medical Association recently contributed $100.000. Another large contribution came from the Arizona Medical Association in the amount of $7,230, which represents a $10 per member dues increase voted for AMEF by the association. Both Arizona and Utah have followed Illinois physicians by voting a dues increase as a method of increasing contributions from their states.

Since Jan. 1, 1954, the Foundation has received a total of $968.000 and expects to reach the one million mark in September.

TOPICS OF *Current Medical* INTEREST

RX., DX., AND DRS.

By GUILLERMO OSLER, M.D.

A RECENT editorial in the Washington, D. C. 'Medical Annals' by Dr. Thomas McP. Brown of George Washington University hails and describes the coming era of "ANTICIPATORY (or preventive MEDICINE." . . . During this golden time the true basic mechanisms of disease will be known, and the superficial relationships (such as stress and hypertension or ulcer) will be archaic. The domination of the lay press will be gone, since no drug can be used until a 3 to 5 year follow-up has been published. (This will eliminate use of penicillin on demand, and the "tragic deficiencies" from cortisone). . . . Possibly two kinds of doctors will be available,—the 'non-operating' doctor (formerly the internist and specialist), and the 'operating' doctor. This will bring back, by its simplicity, the patient-physician relationship, and will provide physicians so well-trained in physiology that they can anticipate chronic illness and prevent it. . . . Dr. Brown did not say 'when', but since medical training and practice develop by evolution we can probably dream of it (until the next paragraph) and let things take their course.

Since this is a column of pure science, and not a lay publication, perhaps we can be forgiven for mentioning AN INCOMPLETELY-BAKED DRUG. A new chemical (a fencholate, by the Merrill Co.) was mentioned during the summer for trial in HISTOPLASMOSIS and even COCCIDIOIDOMYCOSIS. Dr. Charlotte Campbell has worked with an antibiotic called 'NYSTATIN' at the Walter Reed Army Medical Center. Mice infected with Histoplasma capsulatum had a high rate of survival (95%) after treatment, even when it was started late, compared with a uniform mortality in the untreated. . . . This publication, quotation, and even hope will not be a part of the 'era of anticipation', though it looks as though the name fit the present tendency better than the future plan.

To anyone who has had to treat a child with severe NEPHROSIS it is encouraging to find a routine which seems to help. Greenman and Danowski of Pittsburgh used ACTH (100 mg. daily for 28 days), penicillin, and a very low sodium diet. (Nitrogen mustard was of no value). . . . Edema disappeared first, and the children became normal or were improved in a high per cent of cases. Relapses responded to re-treatment. The low sodium caused trouble for a few.

The occurrence of POLIO IN FAMILIES has been studied by Horstmann and McCollum of New Haven. The methods are not practical except for research, since they consist of tissue-culture for virus in the stools. The test is quick, however. . . . Ninety-one contacts of 32 cases were studied, and 28 were found to be infected with Type I poliomyelitis virus. Thirteen of these had minor symptoms, and 15 had none. . . . Studies for resistance of the contacts showed that a high percentage of the younger susceptibles became infected, while those over 15 years were rarely involved. . . . We seem to be edging up closer to a knowledge of polio epidemiology.

PERSPIRATION ODOR is largely produced by certain bacteria, says a secretary of the A.M.A. Committee on Cosmetics in 'Today's Health'. . . . Deodorant creams and liquids are the only materials which will inactivate the bacteria. Soap and water will clear away some of them, but have no inactivating effect. . . . The apocrine glands do not function in children, and are less active in oldsters. Adults vary in the intensity and character of 'sweat'. . . . Oddly it has not yet been possible to combine the logical agents, soap and a deodorant.

Doctors who can write fiction occasionally exist, especially in England. Doctors who write autobiographies are even less common in any country. Few have enough to say which would be salable. . . . A recent book of BRIEF, TRUE PERSONAL STORIES BY PHYSICIANS is good, and should sell. It is called "When Doctors Are Patients', and consists of 33 case histories of most common diseases. The advertising says "cool, heartbreaking self-knowledge". . . . The late Dr. Max Pinner had the idea years ago. He collected several dozen cases, including at least two from Tucson, but B. F. Miller excluded these when he edited the volume this past year. "Too many pulmonary cases" was his reason. . . . If you don't buy a copy you'll probably get one for Christmas.

VAGINAL TRICHOMONAS infection is very common, quite often symptomatic, and usually hard to treat. The number of methods which have been suggested is good evidence of the latter. . . . Even more hopeless has been the therapy of TRICHOMONAS IN THE MALE. It may be a source of infection for the female, and no specific or helpful method has been available. . . . Now however, Dr. Groat, and MacGregor have reported in the Michigan State Medical Journal on the use of ATABRIN in 4 cases, with notable success. The drug is logical, since it works in giardiasis. It was

Should Health be a Luxury?

As you know from your own practice, people put off going to the doctor for two reasons:

1. They're afraid they'll find out they ARE sick . . .
2. They're afraid they can't AFFORD to be sick!

In many cases, health is a luxury because people won't see their physicians until they "get a little money ahead." This, of course, is how serious illness gains a foothold.

As Arizona folks learn about the Budget Plan for Health, they lose their financial fears. They find out they can budget their medical bills in easy payments at low bank interest. And they appreciate your consideration in suggesting a Plan that enables them to get medical treatment when needed without worrying about the money.

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If you'd like a fill-in on the details of the Budget Plan for Health, call "Bud" Gray at the Phoenix Office (ALpine 8-7758) or Bob O'Rourke in Tucson (3-9421).

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given to cases with a definite diagnosis (with 'morning drop' and backache) and in spite of the yellow skin discoloration. The patients, few 'tis true, were cleared of the infestation in three weeks. . . . Might be worth a trial.

The lateral POSITION FOR CHEST SURGERY has been disapproved by Lambert and colleagues at Eagleville Sanatorium (Pa.). It impairs ventilation of the lower, compressed, contralateral lung, and produces transient patchy atelectasis. The acidosis and carbon dioxide retention which tend to occur during anaesthesia may be worsened by the posture. The Overholt or supine position is better.

Are you seeing much LEAD POISONING? If you are, do you see much LEAD ENCEPHALOPATHY? If you do you could be interested in an article on a new therapy which succeeded in a few cases, described by Bessman, Ried, and Rubin in the Med. Annals of the D. of C. . . . They describe a 'chelating' agent for removal of active lead. The drug is a Calcium (Disodium) VERSENATE, prepared by the Riker Laboratories, Inc. The weak union with calcium allows it to combine with lead but not to remove calcium from the blood.

Some medical journals take a fanatic stand against V.A. HOSPITAL PRACTICES. The 'Norfolk Medical News' of Massachusetts is as militant as any we have seen. . . . It quotes a Boston newspaper report of a V.A. Director of Nursing, who said "V.A. not in competition for nurses," and the 'News' adds the comment that the salaries are 50 to 90% higher than for comparable categories in local voluntary hospitals. . . . The journal also tilts a lance at the attempts of a V.A. medical director to fill his new hospital by soliciting doctors to send in acute cases. It says that regardless of what the applicant patient reveals in the questionnaire concerning his financial status," the V.A. hospital cannot (and does not) refuse to admit him." . . . Harsh words to the V.A., but you can't tell a flaw without a program.

PROSTATISM spares neither the lay nor medical plumbing, so keep your fingers crossed and take a clear look ahead. No ground has been gained in prevention, and it is irreversible by physical, chemical, or viologic means. . . . Hess, Roth, and Kaminsky survey the only means of treatment after it has become obstructive (ablation), and try to decide on ways and means for bettering the chances. . . . All approaches to excision have certain hazards, so skill is the major requisite. Next hardest comes mastery of the perineal technic. Easiest is the suprapubic transvesical. It is necessary to have mastery of all.

The disturbing frequency of PROSTATIC CANCER, even without symptoms and signs, has been stressed this past year. This creates a demand for therapy, which is followed by new methods. . . . Surgery and hormones have a leading place, and now comes (from Iowa City, and the journal of Urology) a report on injections of RADIOACTIVE GOLD. . . . The best route of approach is transvesical (plus retropubic), with perineal injections later if an area has been missed. The radiation is obtained by injection of the gold solution into the fascial compartments, using a pressure syringe limiting the amount to 1 cc. per position, and injection from 15 to 30 cc. total depending on estimate of the number of grams of gland present. . . . Clinical arrest and even negative biopsies have occurred in about 50% of 100 cases, and the rectal and urethral complications are now notably reduced.

The status of a new NARCOTIC ANTAGONIST had to be viewed with uncertainty, until a report in 'Surgery' by Adriani and Kerr. Adriani is one of the 'Ralph Waters boys' from the first American school of anaesthesia at Wisconsin, and when he says "OK" it is good enough for Osler. . . . 'NALLINE' is N—allylnormorphine, and is actually derived from morphine. It is non-addicting. It will relieve the respiratory depression caused by morphine, most of the emesis and retching, and some of the hypotension. . . . It is urged that the dosage be kept low (10-15 mg.) to be effective. . . . The drug is most likely to be of use in hospitals and to anaesthetists. It does not replace morphine in the substitution treatment of addicts.

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Notes from the EDITORS PEN

VETERANS HOSPITALIZATION

AS of September 1, the Veterans Administration had only two service connected cases awaiting hospitalization. At the same time 19,878 non-service cases had qualified for treatment and were awaiting hospitalization. For August, the average VA daily patient load was 109,450, compared with 105,486 in August of 1953.

AMEF INCOME NEARS MILLION

It is reported that the American Medical Education Foundation has received this year $995,000 from 14,800 donors to October first. Of this amount, your Association contributed $7,230. The Foundation will be happy to receive any additional individual donations.

NEW DEVELOPMENTS IN MEDICINE

Thomas H. Bate, M. D., Past President of our Association, and graduate of the University of Arizona, participated in a panel discussion on the subject: "New Developments in Medicine" presented by the University over station KOPO-TV (Tucson) Sunday, October 10th, last. Dr. Willis Brewer, Dean of the College of Pharmacy, acting as Moderator; Dr. Mary Caldwell, Professor of the Department of Bacteriology; and Dr. Albert Picchioni, Professor of the College of Pharmacy, with Dr. Bate, comprised the panel. The program was re-broadcast over CBS radio the following Sunday.

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AMA CLINICAL SESSION

Eighth annual clinical session of the American Medical Association will be held in Miami, Florida, November 29 to December 2, 1954, the lecture program, scientific and technical exhibits will all be presented at the Dinner Key Auditorium.

AN OPPORTUNITY TO VISIT EUROPE

Following the Annual Meeting of AMA in Atlantic City, June 6-10, 1955, special deluxe chartered airliners of "United" will leave New York International Airport Sunday, June 12, arriving in Paris the following morning. In addition to France, the countries of England, Italy, Holland, Belgium, Germany and Switzerland are on the agenda for visitation. The tour party will stay at luxurious hotels and motor coaches will provide interesting side tours to historic and scientific points. Plan now for this deserving holiday. For further details write AMA, Post Convention Tour, c/o United Air Lines, 5959 South Cicero Avenue, Chicago 38, Illinois.

ASSOCIATION ANNUAL MEETING

And remember — the 64th Annual Meeting of your Association will be held in Tucson, May 4 through 7, 1955, with headquarters at Hotel El Conquistador.

NOTE: This is a new column. Your Editor will endeavor to bring you short, timely news notes on important subjects which all medical doctors should read. If you have a special item or two, your contributions are solicited. Mail to the Central Office, 401 Security Building, Phoenix, marked to my attention. **R.L.F.**

HORSE AND BUGGY DOCTOR HONORED

ROBERT Nelson Looney, who is not only dean of Yavapai Medical Society, but is the oldest member of the Arizona State Association, residing in the state, came to the Arizona Territory in 1896, going first to the mining town of McCabe. Here he built a small hospital and served the medical needs of the miners and the families of the surrounding area.

He married Martha Mayer, of Mayer, Arizona and they moved to Prescott in 1905 where they have been a valuable part of the community ever since. They have one daughter, Marjorie Belle, who lives with her husband, George Blodell and son in Hollywood, Calif.

Dr. Looney was the first State Health Officer, serving from 1912 to 1917. He can tell many dramatic episodes in connection with the duties of that office in the days when smallpox and diphtheria were prevelent and some frontier towns were resistant to control measures.

Dr. Looney was Yavapai County physician for more than thirty years, and also served as surgeon to the Santa Fe Railroad for fifty years. He served in the Territorial Legislature in 1905-6.

He was an avid sportsman, and has fished and hunted all over the Rocky Mountain area. In 1913, when he realized that the elk had been almost completely exterminated in Arizona, he began a campaign to restock the forests and personally underwrote the expenses of bringing the first herd down from Yellowstone Park.

The Yavapai Fair Association designated September 18 as "Doctor Looney Day" and ceremonies were planned to honor the 84-year old physician.

He arrived at the Fair in a horse and buggy and was greeted by a large crowd. Dr. C. G. Salsbury, Commissioner of Public Health brought greetings from the State Health Department.

Gary Vyne of the Prescott Sportsman Club presented him with a resolution passed the week before at the State Meeting of the Arizona Fish and Game Association. He also begged for a chance to see what a doctor carries in his ever-present little black bag, stating that he had been watching him for 20 years and never saw Dr. Looney without it. The bag was thereupon opened — and found to contain fishing tackle!



Dr. Looney (right) in a horse and buggy.

Mrs. Mary Sills brought greetings from the nurses, many of whom were in attendance in uniform.

Mrs. James Allen introduced Mrs. Looney, and on behalf of the Ladies Auxiliary presented her with a sheaf of red roses. She said that while Gary Vyne talked at length about Dr. Looney's elk, she wanted to point out that he also had caught a dear.

Dr. Joseph McNally brought greetings from the Medical Society, pointing out that many of its present members who had the privilege of working with Dr. Looney were sons of the horse and buggy doctors of fifty years ago who banded together to form the Society. He also read the following telegram from the State Association: "The members of the Arizona Medical Association extend cordial greetings and best wishes to you on this very unique occasion. To possess the distinction of being the senior member of our organization and only charter member of Yavapai County Medical Society with us merits special recognition. We offer warm congratulations to an outstanding fellow practitioner who has earned the love and respect of his many friends and colleagues." Arizona Medical Association, Oscar Thoeny, M.D., President.



Dr. Robert N. Looney at the Yavapai County Fair booth honoring him.

YAVAPAI GOES TO THE FAIR

ARIZONA'S oldest County Society observed its fiftieth anniversary at the Yavapai County Fair, September 17-19 with a booth and special ceremonies honoring Dr. Robert N. Looney, a charter member.

The booth was prepared with the help of the Auxiliary and carried out the theme of "Fifty Years of Service". Featured were the charter, issued October 25, 1904, and a large picture of Dr. Looney, who was among those receiving it fifty years ago. Extending across the back wall of the booth was a mural depicting the eternal race with the stork, the doctor first on horseback, then with horse and buggy, an early day car and finally in a streamlined number heading for the hospital. This was the work of Dr. William Shepard.

There were many pictures of Yavapai towns as they looked fifty years ago. There was Jerome with the smelter in the midst of the town, Prescott with its streetcar, and buggies tied up on Whiskey Row. There were pictures of the mill at Mayer, a panorama of busy Humboldt, and the "ghost towns" of McCabe and Poland were also represented. Congress was amazing.

Part of the picture gallery was made up of charter and early day members, Drs. J. N. McChandless, Warren Day, John MacDonnell, Harry Southworth, Sr., John B. McNally, C. E. Yount, John W. Flinn, C. R. K. Swetnam, Eugene Fahy, Alvin Kirmse and Gail Allee.

Another section was devoted to these doctors in action with their horse and buggy rigs and early automobiles. A showcase contained chaps worn by Dr. John MacDonnell when he practiced at Crown King and made many calls on horseback.

There was a display paying tribute to those early day scholars, Dr. John W. Flinn and Dr. C. E. Yount. It revealed among other things, that Dr. Yount and Dr. R. N. Looney were the first civilian doctors in the United States to report cases of Malta Fever. This was in 1912.

Another showcase contained pictures of the first surgery done with spinal anesthesia at Whipple Hospital in 1907. The surgeons were Capt. Thomason and Dr. C. E. Yount. Ampules of Tropocaine that were used were also in the display. These were imported from Paris. Rubber gloves were also used for the first time at this operation.

There were bonehandled instruments and other old time medical equipment to be seen. There was a fine display of cure-all patent medicines as well as the favorite prescribed items and pictures of the drug stores that stocked them fifty years ago. Modern drugs were represented in bouquets of flowers made out of colorful

pills and capsules available today. These were surprisingly beautiful and attracted a lot of interest.

In constant attendance were two nurses, one in modern garb and one in the striped uniform and bibbed apron of 50 years ago. They carried a strong resemblence to Auxiliary members and distributed copies of Today's Health, like good Auxiliary members should.

The booth drew a large number of visitors and won a blue ribbon.

ANNUAL MEETING— SCIENTIFIC SESSIONS

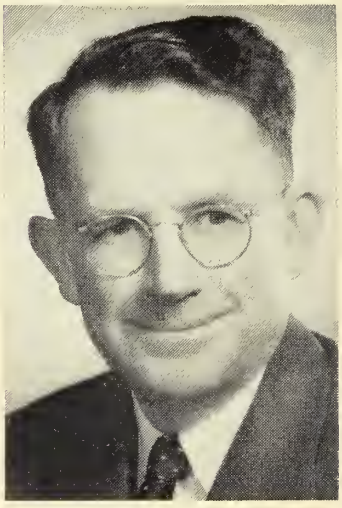
THE 64th Annual Meeting of your Association will be held in Tucson, May 4 through 7, 1955, with headquarters at El Conquistador Hotel. The Scientific Assembly Committee under the able chairmanship of our President-Elect, Doctor Harry E. Thompson, will present an outstanding program for your edification. Details are well in hand and for your advance information, the Committee will present a series of articles commencing with this issue of ARIZONA MEDICINE giving you a biographical review of the prominent guest orators to appear on the Scientific Sessions Program. Plan now to attend and be sure to mark your calendar for this important event.



Louis J. Regan, M.D., LL.B., Loma Linda, California

Professor of Legal Medicine, College of Medical Evangelists, Loma Linda, California; Clinical Professor Professor of Forensic Medicine, Univ. of Southern California, School of Medicine; Dr. Louis J. Regan is Past President of the American Academy of Forensic Sciences; Past President of the Los Angeles County Medical Association; and Member of the Committee on Medicolegal Problems of the American Medical Association. Author of "Medical Malpractice" (C. V. Mosby Co., 1943); "Doctor and Patient and the Law" (C. V. Mosby Co., 1949); Chapters: "Law of Abortion" and "Legal Authorization for Autopsy" in Text "Legal Medicine" (C. V. Mosby Co., 1954); Chapter "Medicine and the Law" in Text "The Physician and His Practice" (Little, Brown & Co., 1954); and more than one hundred published papers on medicolegal subjects.

Dr. Regan, known to many of use, will return to Arizona and present during our Scientific Sessions, topics on the medicolegal aspects of practice.



Charles E. Smith, M.D., Berkeley, California

Dean of the School of Public Health, University of California, Berkeley, California, since 1949, Dr. Charles E. Smith received his medical degree at Stanford University in 1931 and D.P.H. at Toronto University School of Medicine, Department of Public Health and Preventive Medicine, becoming its Executive in 1939. President of the California State Board of Public Health; Member of the National Advisory Health Council, National Institutes of Health, U. S. Public Health Service; Member of the Commission on Acute Respiratory Diseases, Armed Forces Epidemiological Board; and Director of the Commission on Environment Hygiene, Armed Forces Epidemiological Board.

Dr. Smith will discuss the "Current Status of Coccidioidal Infection" and "Diagnosis of Coccidioidal Infection" during our Scientific Sessions.

IMPORTANT ANNOUNCEMENT

American Board of Physical Medicine and Rehabilitation

The next examinations for the American Board of Physical Medicine and Rehabilitation will be held in Philadelphia, June 5 and 6, 1955. The final date for filing applications is March 1, 1955. Applications for eligibility to the examinations should be mailed to the Secretary, Dr. Earl C. Elkins, 30 N. Michigan Ave., Chicago 2, Illinois.

Interesting TOPICS

RECOMMENDED READING IN CURRENT MEDICAL JOURNALS

FACTS AND FANCIES ABOUT CANCER OF THE LUNG. D. W. Smithers, M.D., F.R.C.P., D.M.R. Dr. Smithers is director of the Radiotherapy Dept, Royal Cancer Hospital, and Radiotherapist for the Brompton Hospital for Diseases of the Chest. The lecture with above title, published in part in British Med. Journ., June 6, 1953, is the B.M.A. Lecture delivered in Manchester, Eng., Nov. 12, 1952. It is to be followed by the Milroy Lectures by Dr. Richard Doll, on other aspects of lung cancer, in future issues of the B.M. Journal.

Dr. Smithers calls attention to the monograph by Adler published in 1912, "Primary Malignant Growths of the Lungs and Bronchi," in which Adler claimed that malignant neoplasm of the lung is a common disease which a physician might meet "any day in his practice amongst the young as well as amongst the old." By 1949 doctors in England and Wales were writing "'cancer of the lung" on death certificates 25 times more frequently than they were in 1912.

There is no doubt today that the lung is one of the commonest sites for malignant disease,— primary and secondary. It is also clear that a real increase in the incidence of lung cancer has occurred in many parts of the world. A revolutionary improvement has taken place in the diagnosis of lung cancer, and the methods of diagnosis are discussed.

Twenty years ago (April, 1933), Evarts Graham started to do a lobectomy on a 48 year old doctor, and finding no satisfactory interlobar fissure, boldly carried out the first successful pneumonectomy for bronchial carcinoma. The patient is still living, and pneumonectomies are almost a daily procedure in any large hospital. The survival rates at five years for the patients undergoing pneumonectomy are around 20%. This author reports on 818 patients with proven diagnoses of bronchial carcinoma, seen from 1944 to 1950. Only 35 of these were treated surgically, and ten of these are alive three years or more after treatment. A radical course of x-ray therapy was given to 192 patients, and six of these are alive three years or more after treatment. Surgery offers a real chance of cure to the fortunate few, but at present does not more than touch the fringe of the problem presented by thousands of patients dying with lung cancer. Radiotherapy is shouldering the burden of treatment to an increasing degree, and is doing useful work in relieving suffering in a way which is not possible at present by any other means.

THE GENERAL PRACTITIONER VERSUS CARCINOMA OF THE COLON. A. Bruce Baker, M.D., Spokane, Wash. Northwest Medicine, June, 1953, pp 458-461.

Early diagnosis of cancer in this area is a myth. The patient with a really curable cancer in his large bowel looks and feels well. By the time symptoms have developed, many if not most of the cancers have progressed to the stage of incurability.

From a practical standpoint it might seem that the battle is lost before it starts. "This is far from the truth, however . . . of all cancers of the colon and rectum, 70 per cent can be seen through the sigmoidoscope and 50 per cent can be felt with the finger. The rest can quite satisfactorily be diagnosed in an early stage by x-ray." Therefore, general practitioners can make a significant contribution in early diagnosis of the colon and rectum. Very simple equipment and the will to be thorough in examination of any patient. Medical schools must stress the need for general practitioners to be proficient in sigmoidoscopy and teach the students to look on this procedure as a necessary part of the routine physical examination. All men now doing general practice should acquire the necessary equipment for doing sigmoidoscopy and become proficient in its use. Every patient on whom a barium enema is regarded as needed should, ipso facto, have a sigmoidoscopy. There is no excuse for any doctor to fail to carry out a digital examination of the rectum as a routine part of a general physical examination.

PEPTIC ULCER. Three articles, brief and to the point, present the roentgenologic aspects (Adams, roentgenologist), etiology and medical treatment (Maccubbin, internist), and surgical treatment (Horgan, surgeon), — in Virginia Medical Monthly for July, 1953.

TWENTIETH CENTURY CHANGES IN THE TREATMENT OF SEPTIC INFECTIONS. This is the Shattuck Lecture before the Mass. Med. Soc., delivered on May 21, 1953, by Sir Alexander Fleming, F.R.C.P., F.R.C.S., F.R.S., Professor of Bacteriology and Chief of the Wright-Fleming Institute for Microbiology, St. Mary's Hospital Medical School, London, Eng.

It appears in the New Eng. Journ. of Med., June 18, 1953. This classic presentation of the advances in treating infections from the days of Wright's vaccines to the present antibiotic era has to be read to be appreciated. It defies adequate abstracting. Treat yourself to a half hour of pleasure and profit, by borrowing the journal and reading the whole article.

ARIZONA Pharmaceutical PAGE

BACKGROUND FOR PROGRESS

By Joseph A. Zapotocky, Ph.D.
Pharmacy College, University of Arizona

IF members of a profession are to continue to prosper and progress, they must make a sincere effort to improve their standards and the caliber of the service they render to their community. Pharmacy has shown its desire for improvement many times in the past, and this year it has again taken steps to advance its standards.

Although college courses in Pharmacy were available, there were no formal educational requirements previous to 1922. Then, in 1922 until 1927, a two year college course became mandatory. But then, even that was found to be insufficient and a three year course was adopted and kept in force until 1932 when the four year program became a necessity. The four year program has been in effect until recently when this, too, was found to be inadequate for the modern pharmacist who, as a member of the health team, must today absorb more knowledge and improve his skills and technics in order to give better and more proper service to his community. For that reason, the American Association of Colleges of Pharmacy, at their annual meeting in August of this year, felt that a five year course in Pharmacy had become necessary, and adopted the five year program of college training to become effective in the year 1960. Although the four year program provided the pharmacist with the necessary scientific and professional training required for professional service, it lacked training in the liberal arts so vital to his social, cultural, and moral development. With this broader training, the pharmacist will not only be able to understand and provide better pharmaceutical service to his community, but will also be able to understand and play a more prominent role in civic affairs, including the political, social and religious aspect of the work.

The College of Pharmacy of the University of Arizona, although one of the youngest pharmacy schools in the United States, recognized the need for such a broad program of education for pharmacists years ago and instituted the five year program in 1951. The graduates of this program receive extensive instruction in the physical sciences including Inorganic and Organic Chemistry, Qualitative and Quantitative Analysis, and Physics as well as the necessary mathematical courses. In the biological sciences, their course work consists of Botany, Zoology, Bacteriology, Physiology, Biochemistry, Anatomy and Pharmacology. Courses which are a direct asset to their future business needs, as English, Speech, Accounting, Business Management, Economics and Jurisprudence, are also a part of their study. In addition, they are free to choose courses in the social sciences, humanities, history, and political sciences. Their training for professional pharmacy extends over four years of the course and prepares them for all phases of pharmaceutical operations, such as retail or hospital pharmacy, detailing the medical profession, manufacturing, research, or further study for an advanced degree. Their study of the social sciences prepares them for better citizenship in their community.

With such a revised and expanded curriculum as a background for the practice of pharmacy, it is hoped that the pharmacist will be better able to perform his duties in a competent manner and to assume all phases of his professional and social responsibilities so as to bring ever increasing recognition to his profession as a member of the health team.

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Organization Page

CIVICS

Norman A. Ross, M.D., Phoenix, Arizona

THE NATIONAL SOCIETY FOR BRAIN INJURED, INC., 711 West Thomas Road, Phoenix, Arizona; Lynne Davis, Executive Director.

The Arizona Chapter of the National Society for the Brain-Injured plans gradual expansion of services for the brain-injured during the coming year.

Comprehensive diagnostic and medical treatment for the brain-injured is incorporated in the Society's proposed Brain-Injuries Clinic. This clinic will provide combined neurological, psychological, educational and language diagnosis of children referred by physicians.

The pre-school social classes will be reopened early in the fall. Remaining for a time under the guidance of volunteers for whom there will be a continuing in service training program, the pre-school social classes will be expanded to include a greater number of children and to conform more closely to the pattern of regular school hours and days.

Land has been acquired for and architectural plans are prepared for the Perry Institute on Brain Injuries; building will begin late in the winter. The program of public education on brain-injuries will continue throughout the year.

THE SOUTHWEST BLOOD BANKS, 710 East Adams Street, Phoenix, Arizona; W. Quinn Jordan, Executive Director.

It's heartening when doctors order a transfusion to know that ample supplies of the required blood type are on hand. But how many of us are familiar with the elaborate setup which assures us this blood is always available?

In an extremely efficient operation, without fanfare or publicity, Southwest Blood Banks, Inc., is the organization in this area which provides this necessary service. How many lives have been saved by transfusions of blood furnished by Southwest is not known, but it is known that on an average of seven minutes of the day, 365 days a year, someone receives a pint of blood through the services of this vast non-profit organization.

Providing service to small towns as well as large cities, Southwest operates in an area extending from Brawley, California to Lafayette, Louisiana, and from Las Vegas, Nevada to McAllen, Texas, on the Mexico border. Full-scale banks are maintained in Albuquerque, El Paso, Houston, San Antonio, Lafayette, Lubbock and Phoenix.

Phoenix is the corporate headquarters of the nation's largest medically-operated, self-supporting blood banking institution. Maricopa County Medical Society was the parent organization. Extent of Southwest's operations can be envisioned when we realize that an area of more than 375,000 square miles, containing more than 4,000,000 people, is serviced. During July, 1954, 275 different hospital, laboratories, and clinics throughout this area received blood supplies from Southwest.

The organization's board of trustees realize a two-fold responsibility — to the medical profession and to the public. Members of the corporation's board, representing five county medical societies, all are members of the American Medical Association, and each member bank is governed and advised by the local county medical society.

(Note this unique insurance feature)

For $1 a year, a person can now be covered up to $20 a pint for every pint of whole blood he may require for transfusion purposes. In addition, all dependent members of his family under 19 also may be covered for $1 each, with a maximum charge of $4 per family per year.

* * *

THE MUSCULAR DYSTROPHY ASSOCIATION OF AMERICA INC., Maricopa County Chapter, P.O. Box 6004; Marian Johnson (Mrs. F. E.) Secretary.

Thirty-six outstanding medical scientists presented papers relating to Muscular Dystrophy at the Third Medical Conference which was held at the Hotel New Yorker, October 8th and 9th, with an attendance of approximately three hundred doctors and medical authorities.

Mrs. Mildred Marion, past Chairman of the Chapter, is conducting a state wide census and

survey to determine numbers and needs of Muscular Dystrophy patients.

The Maricopa County Chapter of the Muscular Dystrophy Association is carrying out a program of direct service and social aid to Muscular Dystrophy patients.

Plans are being made for the National Campaign in November to raise funds to further this program, which is, however, supplementary to the main objective — that of making funds available for **intensive research** into the cause and cure of the disease.

* * *

ARIZONA TUBERCULOSIS AND HEALTH ASSOCIATION, 111 East Willetta, Phoenix, Arizona; Helen Watkins, Executive Secretary. This is your State Association Master TB Seal Sale letter. Look for the local version of same in your mail about Nov. 22.



"More in '54"! Not more TB but more need for funds to control and eventually eradicate TUBERCULOSIS. "Every case of Tuberculosis is an indictment against society-an irrefutable piece of evidence that someone somewhere was either ignorant or callous to his responsibility to do his part in preventing unnecessary human suffering", asserted James E. Parkins, M.D., Managing Director of the National Tuberculosis Association during the 50th Anniversary Meeting of that voluntary organization of doctors and laymen.

There is no simple solution to tuberculosis today. There is no one "miracle drug" which promptly and permanently cure a case of tuberculosis. There is no ideal vaccine which can be universally used to prevent tuberculosis. But if modern knowledge about TB and modern techniques for its control are used to the fullest extent, tuberculosis can be defeated in Arizona.

November 22, 1954, markes the opening of the 48th Annual Sale of Christmas Seals; this is the campaign which finances not only the National Tuberculosis Association but its 3,000 State and local affiliate. Ninety-four cents of every Christmas Seal dollar is used in the State in which it is contributed for (1) Education, (2) Case-finding, (3) Rehabilitation, (4) Research—in some states. Of the remaining six per cent which is forwarded to the National Tuberculosis Association, one per cent is devoted to research (medical and social) and five per cent to the work of the National Tuberculosis Association.

A pair of 1954 Christmas Seals (they are still only a penny a piece) on every card, letter and package you send from now until Christmas will help to mean "More in '54". It will mean more can be done in Arizona. Let's "Seal TB out of Arizona". Do it today!

THIRD ANNUAL CANCER SEMINAR ARIZONA DIVISION — AMERICAN CANCER SOCIETY

JANUARY 13, 1955

Morning Session:

CANCER OF THE GASTROINTESTINAL TRACT — Gastric ulcer or gastric cancer — the physician's dilemma; The radiologist's diagnostic criteria in lesions of the upper gastrointestinal tract; Premalignant lesions of the colon and rectum — their diagnosis and management.

Afternoon Session:

CANCER OF THE GASTROINTESTINAL TRACT — continued. Problems of the rehabilitation of the ostomy patient; BONE TUMORS — Symposuim on diagnosis and treatment: Pathological Aspects, Radiological Aspects, Surgical Aspects.

JANUARY 14, 1955

Morning Session:

THE DEVELOPMENT OF PRESENT DAY TREATMENT FOR CANCER OF THE BREAST PROGRESS IN CANCER RESEARCH.

Afternoon Session:

CANCER OF THE FEMALE GENITAL TRACT — The role of cytology in the detection of early uterine cancer; Symposium: The present day controversy in the management of uterine cancer; Clinical behavior of ovarian tumors; Urinary tract complications of radical pelvic surgery for cancer.

JANUARY 15, 1955

Morning Session:

CANCER OF THE GENITO-URINARY TRACT — Testicular tumors: Classification, diagnosis, management; End results in treatment of prostatic cancer; The differential diagnosis of hematuria; The clinical behavior and curability of bladder cancer.

Woman's AUXILIARY

A JOB TO BE DONE

CERTAINLY it is the duty and privilege of a legislative chairman in each organized auxiliary to become indispensable to her group. It is her special job to organize and present legislative news and information in a concise, effective, interesting manner. She has a real challenge. She must present material, which takes much time and study to understand and remember, to a group which is already busy with a good many other projects. To accomplish her objective, she must first take stock of her own knowledge along these lines, and then after evaluating it, begin a re-educating program for herself.

A review and study of our constitution is very helpful and a real inspiration, and because the House and the Senate of our legislative branch of the government each has its own rules by which is operates, it is important to have some knowledge of how each House operates and how a bill becomes a law. Being fortified with this knowledge helps greatly in understanding the material which comes from our AMA Washington office. Teaching herself to become more cognizant of politics in general by being alert to news items of this nature, and participating in and contributing to civic groups who are interested in good government, help to prepare her for her job. Most of us in our busy lives forget that giving our views to our congressmen on issues of the day is a priceless privilege and responsibility and we should push ourselves out of our complacent ruts to exercise that privilege. Unless we, as legislative chairmen get in the habit of letting our views be known to our congressmen, we can hardly hope to influence our groups to practice the same.

It is ineffectual and useless to present material of legislative nature to a group that may need to re-educate itself. It is very likely that it does. Why not take them through the program you outlined for yourself? With limited time each meeting, you can only hope to cover the high spots, but it will serve to spark interest and will help to make the material more understandable. Teaching members how a bill becomes a law and how to write to their congressmen would engender confidence in themselves and serve as an impetus to acquiring the habit of active interest in legislative affairs.

It seems redundant to present an argument for active interest and intelligent understanding of legislation concerning the medical profession, but there are too many doctors' wives who seem to think that it is out of the realm of their responsibility. More than in any other group of women, it behooves us all to re-educate and inform ourselves, then to act. Our busy husbands have little time to study administration proposals and less time than we to act upon them. We must be able to understand and intelligently discuss with them legislation as it comes up. We can do our part in letting those whom we have elected know that what we believe to be in the best interest of the American people is the desire of the medical profession.

Mrs. L. D. Sprague
State Legislative Chm.

GILA COUNTY PRESIDENT'S REPORT

THE Woman's Auxiliary to the Gila County Medical Society boasts a total of thirteen members. While the membership is small they strive for accomplishments that are big.

Every week the Auxiliary presents a radio program, fifteen minutes long, dealing with some pertinent medical problem. The transcribed program, of course, comes in record form from the American Medical Association in Chicago but a faithful member sees that the records are at the radio station on time and she also sees that they are returned to Chicago.

Nine of our members are trained to give audiometer screening tests and every year for the last three years and again this year the Auxiliary will assist in conducting "hearing tests" in the local schools in conjunction with the Easter Seal Program of the Arizona Society for Crippled Children.

Another member will be very active in the Nurse Recruitment Program and she works closely with our schools and public nurses at the opportune time.

Our gals while rather occupied with families and all that makes up a doctor's household still

give generously of their own time and efforts as the results from this small group prove.

Mrs. Clarence Gunter
President, Woman's Aux.
Gila County Medical Soc.

MARICOPA COUNTY PRESIDENT'S REPORT

THE Maricopa County Medical Auxiliary started the 1954-55 year with a morning meeting followed by lunch at the Arizona Country Club October 19.

The program for the year was presented by the new board members, and Dean Carman of Trinity Cathedral gave a talk about the Red Feather drive.

This year, the Auxiliary will again join with the Nurses' Association in an educational program directed to young women to interest them in nursing as a career. This will culminate in Nurse Recruitment Week as proclaimed by the governor. During this week a film on nursing will be shown to all interested girls at the high school level.

Morning coffees will again be used to introduce the new auxiliary member to our group.

A check for $2850.00 was presented to the Child Guidance Clinic in May. As many of our members are serving on the clinic board and the doctors are serving in an advisory capacity, we feel this project to be worthy of our continued support.

Our program at the November meeting, a panel discussion on "Our Teen-Agers" was very successful. Mrs. Joseph Bank was moderator.

The Auxiliary will have its only social function December 4 at the Phoenix Country Club — an informal dinner-dance.

Mrs. Robert H. Cummings
Maricopa County President.

PIMA CO. WOMAN'S AUXILIARY FOR 1954-55 YEAR

"LEADERSHIP in Community Health" is the theme for this year's Auxiliary work as stated by our National President. In accord with this theme the Pima County Medical Auxiliary has embarked on an ambitious program of health education and individual participation in volunteer work for health organizations, in addition to giving, as an organization, as much financial support as possible to worthy health agencies.

Our health education program will reach almost everyone in this area through the School Health Radio Quiz program which we sponsor and supervise, the continuation of an adult radio health program, and through the increasing sale of Today's Health Magazine subscriptions.

The Philanthropic committee has completed setting up the Medical Section of the Community Chest for 1954-55 and our members are soliciting all M.D.'s as well as hospitals. We will be responsible for the Medical Section of the Red Cross Drive as well.

Many of our members will be trained during the year in Civil Defense first-aid courses. All of us will benefit by the extensive schooling our Civil Defense chairman will receive at a workshop. We will assist the Pima County Medical Society in their Civil Defense program whenever possible.

So that we may vote wisely on all issues involving health and the Medical Profession, our Legislative Chairman will keep us well informed.

We will continue to work for Nurse Recruitment and the establishment of more "Future Nurses" clubs in our schools. One of the student nurses on scholarship at St. Mary's receives a monthly "spending-money" allowance from us.

Our activities during the early part of the year will be well spiced with social functions designed to help us get to know one another better. Early in October we held a very successful "Get-Acquainted Patio Buffet Supper" for Pima County doctors and their wives with over 200 attending. In November we will hold the annual Auxiliary Membership Coffee. December brings a social hour with our husbands for a holiday toast after our regular meeting.

Pima County will host the 64th Annual Convention of the Arizona Medical Association on May 4, 1955 through May 7th. We are looking forward to seeing our friends from around the state again.

Our calendar looks full for the 1954-55 year — but with the participation of the majority of our members it will be a successful and rewarding year for the Pima County Medical Auxiliary.

Respectfully submitted
Betty (Mrs. Joseph) Kinkade
President, Woman's Aux. to the
Pima County Medical Society

WOMAN'S AUXILIARY TO THE YUMA COUNTY MEDICAL SOCIETY

THE Yuma County Auxiliary is again doing audiometer tests on freshmen and juniors of Yuma Union High School starting the second week in October. Mrs. James Volpe, our Public Relations chairman is heading this project.

A Future Nurses Club has been organized in high school, it has 35 members to date. This was accomplished by Mrs. Charles S. Powell (Nurses Recruitement Chairman) in conjunction with The Nurses Association District No. 7 and the school nurse Miss Klaenhammer (their adviser). We hope to train these girls this fall to take over the audiometer tests next year in high school and leave us free to branch out in the grammar schools.

For the AMEF fund, we're starting a Round Robin Food Basket among members, also a gift raffle at each meeting.

Social plans for the year include a Christmas party for members and their husbands.

In January, a pot luck supper at my home for Mrs. Brick Storts and Mrs. Roy Hewitt when they visit us with their National reports.

A tea for the Future Nurses Club in March at the home of Mrs. Charles S. Powell.

Our May meeting will be a patio party combined with the doctors at some ones home.

Other programs include one on Civil Defense, Legislation and a speaker on Local law enforcement proceedings.

Marian (Mrs. John F.) Stanley
Yuma County President

YAVAPAI COUNTY PRESIDENT'S REPORT

THE Yavapai County Medical Auxiliary is looking forward to a good year. We feel we have already gotten off to a good start. Early this summer our Public Relations Chairman had a series of summer health records broadcasted on the radio. This series has been completed and a new series has been started with excellent comment on them.

The County Medical Society had a booth at the county fair showing fifty years of medical service to the county and the Auxiliary helped the doctors in the booth's construction as well as explaining various things in the booth to the public. The booth won first prize plus one hundred dollars. We were all very proud we were able to help with this project.

Our opening meeting was held in October with a dinner at the president's home given by the officers.

All the chairmen were appointed in May and each one has been receiving material from National.

In November we will give a food basket to a needy family for Thanksgiving.

Plans for our Charity Ball on December 4, are already under way. We have a very good chairman again this year and hope to be as successful as last year. We would like very much to see all of you at the Ball. Proceeds from the Ball go to the Community Hospital.

At Christmas time a basket of food and clothing will be given to a needy family.

In January, cookies will be made for the patients at Whipple for their Sunday afternoon coffee hour.

Early in the year we will entertain the state officers.

In February we will have our annual rummage sale; profits made from this sale means contributions to Red Cross, Cancer, Nurses Loan, etc.

In the early spring a tea will be given at the hospital in connection with Nurse Recruitment Week.

During the year we will be called upon for help for the needy and we are always willing and ready to be of service.

The program outlined above is subject to the approval of the county members, but except for a few details is ready to start in full swing.

Dorothy Shepard, President,
Woman's Auxiliary,
Yavapai County Med. Soc.



ARIZONA MEDICINE

Journal of ARIZONA MEDICAL ASSOCIATION

VOL. 11, NO. 12 DECEMBER, 1954

TABLE OF CONTENTS

OFFICERS

ARIZONA MEDICAL ASSOCIATION, INC., DIRECTORY 6A
WOMAN'S AUXILIARY DIRECTORY 6A

ORIGINAL ARTICLES

LIPOMAS OF THE G.I. TRACT 435
Ord L. Shumway, M.D., Phoenix, Arizona
PANCREATIC DISEASES 439
J. L. Sims, M.D., Madison, Wisconsin
THE POSSIBLE ROLE OF THE VERTEBRAL ARTERY IN AMYOTROPHIC LATERAL SCLEROSIS 444
Otto L. Bendheim, M.D., Phoenix, Arizona
PENTOTHAL SODIUM ANESTHESIA: A PHANTASY 447
Drs. Paul H. Lorhan and Max I. Miller, Kansas City, Kansas

MEDICAL PROBLEMS

PHOENIX CLINICAL CLUB 451
Howard Lawrence, M.D., Phoenix, Arizona

THE PRESIDENT'S PAGE

HOLIDAY GREETINGS 460
Oscar W. Thoeny, M.D., President, Arizona Medical Association, Inc.

EDITORIAL

CAUTION? 461

TOPICS OF CURRENT MEDICAL INTEREST

RX., DX., AND DRS. 463
Guillermo Osler, M.D.
PLANS SET FOR CME'S 1955 CONVENTION 462
AMERICAN ACADEMY OF FORENSIC SCIENCES 462
SEMINAR IN OPHTHALMOLOGY AND OTOLARYNGOLOGY 467
ANNUAL MEETING — SCIENTIFIC SESSIONS 466
BOOK REVIEWS 467
MEDICAL ABSTRACT — Treatment of Wounds Inflicted by Rabid Animals 468
INTERNATIONAL ACADEMY OF PROCTOLOGY 468
NOTES FROM THE EDITORS PEN 469
MID-WINTER RADIOLOGICAL CONFERENCE 470
STANFORD SPRING POSTGRADUATE CONFERENCE IN OPHTHALMOLOGY 470
PROGRAM THIRD ANNUAL CANCER SEMINAR 471
PHOENIX INSTITUTE OF NEUROLOGY & PSYCHIATRY 472
ARIZONA PHARMACEUTICAL PAGE—Standards—The Backbone of Medicine 473
By Joseph A. Zapotocky, Ph.D., Tucson, Arizona
ORGANIZATION PAGE — Civics 474
Norman A. Ross, M. D., Phoenix, Arizona
INTERESTING TOPICS — Recommended Reading 476
W. Warner Watkins, M.D., Phoenix, Arizona

WOMAN'S AUXILIARY

OUR STUDENT NURSE LOAN FUND 479
Mrs. Donald A. Polson, Phoenix, Arizona

DIRECTORY

LABORATORIES 21A
DRUGGISTS DIRECTORY 22A
SANATORIUM DIRECTORY 24A
PHYSICIANS DIRECTORY 29A

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Original ARTICLES

LIPOMAS OF THE G.I. TRACT

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Phoenix, Arizona

THE PRESENCE of lipomas in the gastro-intestinal tract was first recognized by Bauer nearly 200 years ago, but it was not until 1876 that Morel reported intussusception of the bowel secondary to these tumors. As interest in this surgical problem developed the number of reported clinical cases increased from 72 in 1909 (Stitten) to 310 in 1951 (Warren). Additional numbers of asymptomatic cases were identified at autopsy and the incidence varried from 0.18% to 0.75% in thousands of consecutive necropsies reported in the literature. Compared to other benign gastro-intestinal lesions lipomas rate next to adenomas of the colon and myoma of the stomach in incidence, and have been found in all parts of the tract from esophagus to rectum. Approximately 50% of lipomas are found in the colon with the major portion of the remainder in ileum and stomach. Weiner and Polaye in 1938 gave the following breakdown on 248 cases: Esophagus 0.8%, stomach 12.5%, duodenum 7.7%, small intestine 27.4%, illeocecal region 4.8%, and colon and rectum 46.8%. Within the large bowel the short right colon and cecum contain 50% of the colonic lipomas, with the remander distributed throughout the descending colon, transverse colon and rectum in that order of frequency.

Pathology

Lipomas are composed of a collection of well circumscribed adult fat cells with a fine septate supporting stroma. They apparently originate 90% of the time between the muscularis mucosa and the inner circular muscle layer of the bowel wall; although origin between the circular and longitudinal muscle layers or in the subserosa has been reported(16). Pedunculation is favored by the traction of peristalsis although the growth remains sessile in a fairly high per cent of cases(12). Ulceration of the overlying mucosa due to pressure and abrasion is a frequent occurence, and bleeding follows



Fig. No. 1. A pedunculated lipomatous polyp of the colon showing an ulcerated mucosal surface. (Case No. 1).

Read at the Regular Monthly Staff Conference, Maricopa County General Hospital, Sept. 20, 1954.

(14) (Fig. 1). Torsion on a pedicle interferes with the blood supply and infarction or even spontaneous extrusion may result in 10 - 20%(3). The subserous varieties occasionally expand to 15 - 20 cm. in size before producing symptoms, but the sub-mucous type gives rise to early trouble because of obturation and intussusception. Ellis and Windham (6) report benign tumors of small bowel produce intussusception in 23 to 44%; while Long(10) found ten of 31 lipomas of the colon produced intussusception.

Symptomatology

Symptoms produced by the presence of intestinal lipomas are produced by three factors: 1. Obstruction; 2. Intussusception; 3. Ulceration with hemorrhage. Symptoms persist for an average of 3-4 years before definitive treatment is performed. The outstanding complaint is abdominal pain which may be vague, fleeting, and infrequent but recurrent over many months (14, 16) (obturation), but occasionally is punctuated by severe attacks of diffuse cramping abdominal pain with constipation or bloody stools (intussusception).

An abdominal mass may be palpated in 50 to 75% and when associated with intussesception, is usually sausage-shaped, slightly tender and mobile. The presence of a migratory abdominal tumor occurring with the above symptoms is suggestive evidence of intussusception and will eventually develop in about 50% of the cases (19). It is of interest to note that intussusception in the adult is usually associated with a benign intra-luminal tumor.

Constipation occurs in 50% of reported cases and may due to interference with the fecal stream by the presence of an intra-luminal mass. On the other hand, diarrhea does occur and is most likely associated with intermittent release of obstruction.

Melena is not rare(11, 16) and occasionally is severe enough to be associated with a secondary anemia. In adults the source of the bleeding is usually from the ulcerated tumor surface rather than from intussuscepted bowel(6) as contrasted to spontaneous intussusception in infants.

Weight loss may suggest the presence of a malignancy but is due to voluntary restriction of food intake on the patient's part to avoid resultant abdominal cramps and discomfort.

Diagnosis

In view of the symptomatology and the fact that the average age at onset is 53 it is not surprising that the most frequent diagnosis made is carcinoma(15). The long period of symptoms without the degree of physical deterioration that accompanies malignancy should suggest the diagnosis of a benign tumor, however. Unfortunately, even with the abdomen open the presence of enlarged nodes secondary to an inflammatory reaction may occasionally falsely lead to an operative diagnosis of malignancy.

Proctoscopy is of value in visualizing low-lying lipomas of the large bowel but the most information can be obtained by repeated x-ray examinations. Flat films of the abdomen usually fail to demonstrate the tumor unless outlined by a gas-filled cecum. Fat is the most radiolucent of body tissues and lipomas appear less dense radiologically than adenomas(18). If intussusception is in progress a cylindrical homogenous mass surrounded by an air-filled sheath is occasionally demonstrated(12).

The use of barium enemas usually outlines a lipoma of the large bowel in a satisfactory manner. Care should be taken to avoid using too much barium and obscuring the rounded, smooth, and frequently lobulated filling defect. A further point to observe as elaborated by Palazzo(12) is that the tumor involves but one

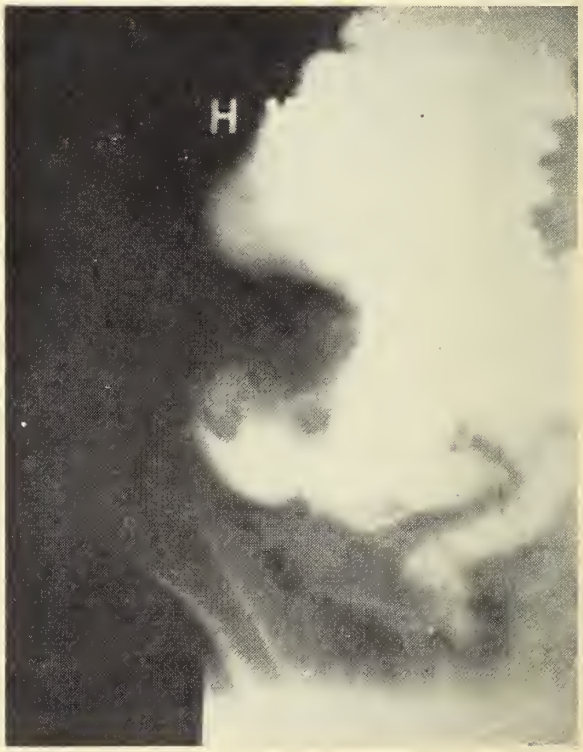


Fig. No. 2 (A). A submucosal lipoma of the cecum demonstrating involvement of the lateral wall only. (Case No. 2).

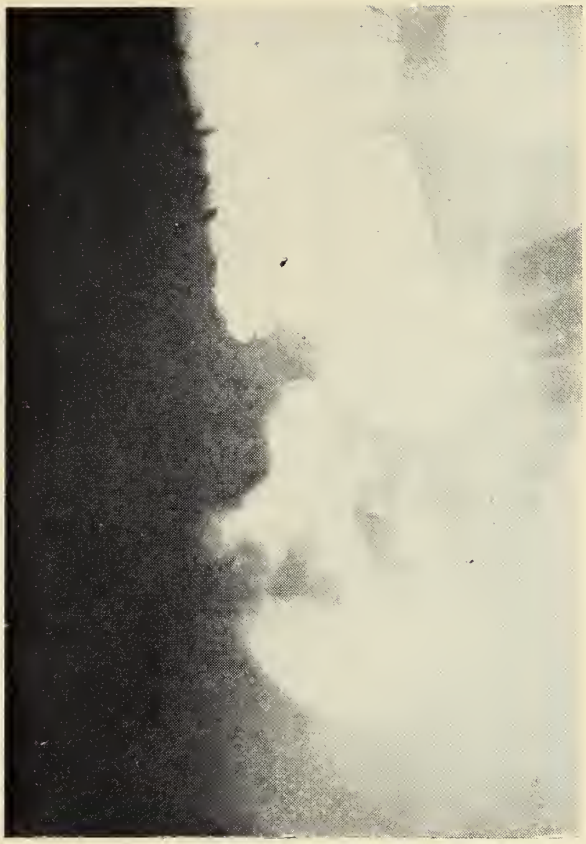


Fig. No. 2 (B). A carcinoma of the cecum showing involvement of the entire circumference of the bowel wall.



Fig. No. 3. A radiotranslucent lipomatous polyp that produced intermittent intussusception of the descending colon. (Case No. 1).

side of the bowel and never the circumference as in carcinoma (Fig. 2 A & B). In profile the junction of tumor and bowel wall is abrupt with a sharp, clear angle. There may be dimpling or narrowing at the site of origin particularly if the lipoma is pedunculated. With intussusception the barium enema may be seen to meet the head of the intussusception and fill the narrow central canal demonstrating longitudinal folds. The peripheral sheath on filling produces spiral coils suggesting a coiled-spring appearance. Occasionally the enema may reduce the intussusception and show the polypoid mass(15) (Fig. 3).

Lipomas of the small bowel can usually be demonstrated with barium meal and painstaking examination.

Therapy

Because of the severity and frequency of complicating factors, principally intussuscpetion, all benign tumors of the small and large bowel should be removed surgically(10). Gastric lipomas with hemorrhage requires subtotal gastrectomy frequently and the majority of bowel lipomas have heretofore been subject to segmental resection(13). In view of the extremely low recurrence rate and since there is no tendency towards malignant degeneration a less radical approach is preferable in many instances. If the diagnosis of a benign tumor can be entertained pre-operatively and confirmed at surgery a colotomy and local excision with the attending lower morbidity and mortality should be chosen. When the tumor has undergone intussusception the mortality may approach 25%. The intussusception is reduced manually where possible and colotomy performed, but if the intussusception is irreducible, segmental resection is required. When the bowel is not prepared with antibiotics, and in severely ill cases, a Mikulicz exteriorization or a proximal colostomy may be life saving.

The following two instances of lipoma of the colon were treated on the Surgical Service at Maricopa County Hospital in 1953:

Case No. 1

A 47 year old white female was admitted to

the Maricopa County Hospital April 23, 1953. complaining of abdominal cramps and mucoid stools of two year's duration. On several occasions she had passed bloody mucous per rectum and a diagnosis of ulcerative colitis had been entertained by her private physician. Two weeks prior to admission she again had bloody mucoid stools with cramps and on straining down experienced a sensation of a mass inside the rectum. Physical examination was normal except for surgically absent uterus and a mass palpated at the tip of the examining finger within the lumen of the rectum. Laboratory examination of blood, urine, and blood chemistry was within normal limits and an EKG was normal. Stool studies revealed Endamoeba histolytica cysts on repeated examinations, and biopsies of rectal mucosa were normal. Barium enema was interpreted as indicating an intussuscepting mass in the sigmoid colon.

The patient was treated for the amoebiasis with aureomycin and carbarsone with subsequent negative stools for ova. Laparotomy subsequently revealed an intussuscepting lesion in sigmoid which was manually reduced and a firm polypoid mass palpated within the lumen of the bowel. The distal sigmoid that received the intussusception was thickened and dilated while the proximal bowel was relatively normal (Fig. 3). Resection of a segment of descending colon bearing the tumor mass was carried out and a primary end to side anastomosis performed. The patient's post-operative course was uncomplicated.

The resected bowel contained a firm, 7 x 4 cm., pedunculated, rounded mass that was ulcerated over its most distal portion and on section appeared to be composed of normal appearing fatty tissue covered by mucous membrane (Fig. 1). On microscopic examination the muscle of the bowel wall ended abruptly at the base of the lipoma and the muscularis mucosa continued over the surface of the polyp beneath the mucous membrane.

Case No. 2

A 77 year old white female entered Maricopa County Hospital on November 23, 1953 complaining of a dull aching discomfort in the right lower quadrant, which occasionally radiated to the right upper quadrant, and was of approximately six months duration. There are accompanying nausea but no vomiting or melena. There was also no change in bowel habits, no weight loss, and no abdominal distention. Physical examination was negative except for a nodular enlargement of the thyroid, a grade I apical systolic murmer, and a vague soft, non-tender mass palpable deep in the right iliac fossa. Laboratory examination revealed normal urinalysis and blood count. Serology was negative and NPN was 21 mgm.%. The EKG was normal and chest film showed pulmonary emphysema and a redundant aorta.

Barium enema demonstrated a smooth rounded filling defect about 6 cm. in diameter on the lateral-inferior aspect of the cecum (Fig. 2A). Proctoscopy was negative.

Laparotomy revealed a soft, fatty tumor occupying the lateral aspect of the cecum and measuring 7 x 4 x 4 cm. Although the tumor protruded in to the bowel lumen it was attached at a relatively broad base and was not truly pedunculated. There was no evidence of intussusception. On section the fatty tumor mass mass appeared to have arisen sub-serosally and compressed or displaced the muscular bowel wall leaving a thin layer of fibrous wall remaining beneath the muscularis mucosa. The tumor was microscopically a simple lipoma.

REFERENCES

1. Allison, T. D. and Babcock, J. R.: Lipoma of the Duodenum Causing Melena. Annals of Surgery, 127: 754 to 756. (April) 1948.
2. Berrack, Solomon, R. etal. Lipomas of the Mesentery of the Small Intestine. Radiology, 56: 850 to 855. (June) 1951.
3. Bigelow, Robert R. and Anlyan, Alexander, J. Submucous Lipomas of the Colon. Archives of Surgery, 59: 114 to 128. (July) 1949.
4. Cavanaugh, Harold N. Submucous Lipoma of Large Bowel. Am. J. of Surg., 80: 860 to 863. (December) 1950.
5. Cavanaugh, J. W. and Mills, W. M. Submucous Lipoma of the Jejunum; report of a case. Journal of Kansas Medical Society, XLVII: 51 to 52. (February) 1946.
6. Ellis, ohn T. and Windham, S. W. Acute Intussusception in Adults Caused by Lipoma of the Ileum. Journal of Medical Association of the State of Alabama, 22: 63 to 67. (September) 1952.
7. Kelby, Gjert M., Submucous Lipomas of the Ileocecal Valve. The Journal Lancet LXVIII: 301 to 304. (August) 1948.
8. Knight, Charles D. and Black, Marden B., Duodeno-jejunal Intussusception Due to Lipoma. Report of a Case. Staff meetings of the Mayo Clinic. 26: 320 to 323. (August) 1951.
9. Lazarus, Joseph A. and Marks, Morris S., Submucous Lipoma of Colon With Special Reference to Acute and Chronic Intussusception. Am. J. of Surg., 70: 114 to 117. (October) 1945.
10. Long, Gabe C., Dockerty, M. D., and Waugh, J. H., Lipomas of the Colon. Surgery Clinics of North America, 29: 1233 to 1242. (August) 1949.
11. Pack, George T. and Booher, Robert J., Intussuscepting Submucous Lipoma of Right Colon. Surgery Clinics of North America. 27: 361 to 371. (April) 1947.
12. Palazzo W. L., Lipomas of G.I. Tract. American Journal of Roentgenology. 62: 823 to 829. (Decemher) 1949.
13. Runyeon, F. G., Submucous Lipomas of the Colon. New York State Journal of Medicine. 46: 2272 to 2276. (October) 1946.
14. Smith, Franklin R. and Mayo, Charles W., Submucous Lipomas of the Small Intestines, Am. J. of Surg. 80: 922 to 928. (December) 1950.
15. Stapleton, J. G., Submucous Lipomas of the Colon, Canadian Medical Association Journal, 61: 159 to 162. (August) 1949.
16. Tenner, Robert J., Lipomas of Large and Small Intestines, The Journal Lancet LXVIII. 12 to 23. (January) 1948.
17. Thomas, John F., Submucous Lipoma of Ileocecal Valve. Texas State Journal of Medicine, 46: 325 to 326. (May) 1950.
18. Warren, K. W. and Brandenburg, F. A., Lipomas of G.I. Tract, Surgery Clinics of North America, 31: 743 to 751. (June) 1951.
19. Weisberg, Lester A., Lipomas of the Colon Causing Intestinal Obstruction, Am. J. of Surg., 76: 116 to 118. (July) 1948.
20. Welch, Claude E., (Case Records—Mass. Gen. Hosp.). New England Journal of Medicine, 239: 897 to 898. (December) 1948.

PANCREATIC DISEASES *

By J. L. Sims, M.D.
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THE pancreas presents to the physician problems which are as fascinating and yet frustrating as any to be encountered in medicine. It is almost as inaccessible to the techniques of the roentgenologist as to the palpating fingers of the bedside diagnostician, and in only a limited number of situations can the clinical laboratory add more than inferential evidence. Even the exploring surgeon hesitates to biopsy the organ for fear of creating a fistula potentially as serious as the original disease. It is perhaps the recurrent inability to obtain simply objective confirmation or denial of the presence of pancreatic disease which leads to what is probably the commonest cause of error in its evaluation — failure to give it serious consideration among the diagnostic alternatives. These are not the commonest of diseases, yet they occur with sufficient frequency to form a regular portion of the experience of every physician except those in the most limited of specialties. In spite of this and of their routinely seriously nature, it can hardly be termed a rarity when they are first thought of in the operating room or at the necropsy table.

Except for diabetes mellitus, which can hardly be defined as a pancreatic disease, the most important considerations in this field are acute and chronic inflammation and carcinoma. Time does not permit review of the interesting rarities of annular pancreas, mucoviscidosis, and functioning islet cell adenomas.

Mumps and perhaps scarlet fever may be associated with specific reactions. Accidental trauma and that incident to surgery, especially gastric resection, may occasionally cause an acute inflammatory reaction. In the latter instance, this may appear 24 to 48 hours after operation, and, confused with other potential surgical sequelae, progress rapidly, perhaps unrecognized, to a fatal termination. Penetrating peptic ulcer, local vascular disease, or adjacent inflammatory processes may at time extend to give secondary pancreatic change. The majority of instances of acute pancreatitis fall in none of these categories, and conjecture as to their cause revolves about biliary disease, the so-called common channel theory, and pancreatic ductal obstruction. Pancreatitis is associated with abnormality of the gall bladder and bile ducts more frequently than would be dictated by mere chance. The belief that pancreatitis is initiated by reflux of bile, perhaps abnormal, through common terminal ductal channels into the pancreas has been criticized because of the occurence of acute pancreatitis in patients with neither biliary disease nor a communication between the pancreatic and bile ducts prior to their entry into the duodenum. Recently, it has been shown radiologically that contrast media injected into the gall bladder may appear in the pancreatic ducts in individuals in whom no continuity between the two duct systems can be demonstrated(1). Metaplasia and proliferation of ductal epithelium and impaction of a gall stone in a common ampulla are the two most commonly invoked factors in the obstructive theory. Occasionally carcinoma may present as acute pancreatitis secondary to ductal obstruction by the tumor.

Whatever the background, the manifestations of acute pancreatitis are primarily due to the activity of pancreatic enzymes which have penetrated beyond their normal confines. Either bile or tissue juice is capable of activating trypsinogen, which may then injure surrounding tissue. Acute pancreatic edema, hemorrhagic change, necrosis and gangrene are but progressive steps as tissues and their blood vessels are damaged by the spreading enzymes. Fat necrosis results from the action of pancreatic lipase. Adynamic ileus is the rule, and peritoneal fluid, often hemorrhagic, may accumulate. Intestinal bacteria may penetrate into the abdominal cavity in response to this injury, adding infectious peritonitis to the problem, localized infection and abcess formation may occur, or the inflammatory exudate and pancreatic secretions may be walled off to give pseudo-cysts. At any stage, progress of the disease may be arrested, with ensuing regression, or there may be steady progression to death.

Chronic pancreatitis presents to the pathologist chiefly fibrosis, both inter- and intra-lobular, with some inflammatory cell infiltration, and

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Medical Portion of a Medical, Radiologic, and Surgical Symposium on Pancreatic Diseases.

varying degrees of parenchymal destruction. Calcification may be seen, either diffusely distributed, or in the form of intraductal concretions. Such chronic disease may progress insidiously with minimal clinical manifestation to the point of serious insufficiency of pancreatic function, or it may be characterized by periodic acute exacerbations, as so-called chronic relapsing pancreatitis.

The clinical picture of these exacerbations differs chiefly in degree from the more fulminant isolated episodes of acute pancreatitis. Indeed, while many patients who recover from an acute pancreatitis never have a recurrence, others progress through additional episodes to the typical pattern of chronic pancreatitis. Both the initial and subsequent attacks may be of widely varying severity.

The outstanding symptom is pain. Typically, this is epigastric, rather diffuse, and often extends to either the right or left upper quadrant. Radiation through to the upper lumbar and lower dorsal regions is common, and in some instances the pain may be felt only in the back. Less often, there may be discomfort elsewhere in the abdomen or in the arms or chest. In the more severe episodes, the pain is intense, and poorly masked by usual doses of narcotics. In the mildest exacerbations of chronic forms, there may be no more than a vague sense of uneasiness. Attacks frequently appear several hours after a heavy meal or a period of alcoholic excess. On other occasions the patient may be awakened after a few hours sleep. In the maiority of cases, the more acute symptoms gradually subside after a course which varies widely in duration. There may then be complete freedom from difficulty until the next attack, if it is to occur. In chronic relapsing forms a continuing dyspeptic pattern is not infrequently present. A limited number of patients find that forward flexion of the trunk, either in the sitting position or while lying on the side gives a measure of relief. This pattern, if present, is strongly suggestive of pancreatic difficulty. Another small group with chronic disease will obtain relief of discomfort by ingestion of food, simulating the picture of peptic ulcer. A number of patients with subacute and chronic disease may have no pain at all.

Misquotation of Courvoisier's law has lead to a widespread misconception that carcinoma of the pancreas is apt to be painless. Regardless of location within the organ, the commonest symptom, and the commonest initial symptom, of pancreatic carcinoma is pain. It is experienced by the great majority of victims of this disease at some time in their course. The pain is generally quite similar to that experienced in subacute and chronic pancreatitis, though occasionally, particularly where the body and tail of the organ are involved, bizarre manifestations are seen.

A second important indication of pancreatic disease is jaundice. This will occur at some time in slightly more than two-thirds of patients with carcinoma of the organ, being considerably more common when the head of the gland is involved, and is the initial or presenting symptom in a much smaller group. In such cases it is usually due to obstruction of the common bile duct, although hepatic metastases account for other instances. In pancreatitis swelling of the organ may at times occlude the common duct, while in other patients cholangitis or actual hepatitis may be associated with the pancreatic disease.

A considerable and rapid loss of weight is characteristic of pancreatic neoplasm, and, when it occurs without other obvious explanation, should suggest this possibility. At a slower rate it is also typical of chronic pancreatic inflammation.

Abdominal distention, paralytic ileus, and constipation are frequent in acute pancreatic inflammation. In chronic pancreatic disease, bowel function varies widely, with diarrhea being not uncommon. With progressive destruction of the gland reduction of its external secretion may eventually result in a steatorrhea which closely mimics the sprue syndrome. In acute attacks marked anorexia and recurrent vomiting are usual; in chronic inflammation and carcinoma they are much less typical. Considerable tenderness and moderate rigidity in the epigastrium, or perhaps more diffuse, characterize acute pancreatitis and the more severe exacerbations of the chronic disease; they are much less prominent or absent in the latent periods of chronic pancreatitis and in carcinoma. Temperature elevations of one or two degrees parallel the acute inflammatory episodes; higher levels suggest possible abscess formation, gangrene, bacterial peritonitis or, in carcinoma, extensive hepatic metastases. Among the less common manifestations of acute stages

are tetany, due to depletion of the serum calcium as it forms soaps with the fatty acids freed by pancreatic lipase, and discoloration about the umbilicus or in the flanks, known respectively as Cullen's and Grey-Turner's signs, and attributed to extravasation of blood following hemorrhagic necrosis. Ascitic fluid may accumulate as a result of inflammatory reaction, in which case it is often hemorrhagic, and possessed of a high amylase content, from neoplastic implants on the peritoneal surfaces, usually with a serous character and the probability of a positive result on Papanicalaou study, or from portal occlusion by either carcinoma or inflammatory swelling, having, in this instance, no directive characteristics as a rule. A palpable mass is exceptional, and usually represents either pseudo-cyst formation or a liver involved by metastases when it is found. Carcinoma of the body and tail of the organ may present, in slightly less than one-third of such cases, the peculiar feature of one or more venous thromboses without other apparent cause. This finding, particularly if accompanied by unexplained weight loss, should always suggest the possibility of such a tumor. Similar thrombosis may occur in a much smaller proportion of neoplasms of the head of the pancreas or of other organs.

Of particular note is the frequency with which psychiatric problems accompany and at times mask pancreatic disease. Cases have been described in which the presenting manifestations of pancreatic carcinoma have been severe psychic disturbances(2). Alcoholism accompanies, and often precedes, pancreatitis in an appreciable number of instances. Most important is the common confusion of chronic pancreatitis with psychoneurosis. At times this reflects the tendency of a certain few physicians to assume that symptoms for which they are unable to demonstrate an anatomical basis must be of psychic origin. More commonly, the neurosis actually exists. It has been variously suggested that psychologic factors are of importance in the causation of pancreatic inflammation, that the patient's attitude merely reflects the anxiety of his physician when faced with inexplicable symptoms, or that this neurosis results from the frustration incident to the continuing failure of his physicians to find a cause for his very real suffering. Whatever the explanation, it is well to recall this association and give strong consideration to the possibility of a pancreatic lesion in the neurotic patient whose symptoms are to any extent compatible with such a diagnosis.

In the preceding discussion no great distinction has been made between the manifestations of acute and chronic inflammation and of neoplasms of the pancreas. In large part, differences in their clinical patterns are a matter of degree and rate of progression rather than of fundamentally different mechanisms and, in any case, it seems more important to focus attention on the organ than to emphasize minutiae which distinguish its various afflictions.

Having suspected involvement of one or another organ, the physician usually seeks confirmation from radiologic study, the clinical laboratory, or surgical exploration. The classic indicator of pancreatic disease is the serum amylase level. Some hours after the onset of an episode of acute pancreatitis the concentration of this enzyme in serum usually rises to values five to fifteen times its normal peak of 150-180 Somogyi units, to decline slightly less rapidly as the attack subsides. In the exacerbations of chronic pancreatitis the increase is less regular and of lesser degree but still frequently quite helpful. In interim phases of chronic inflammatory disease, and in carcinoma, amylase elevations are seen in only a minority of patients, and are of limited degree. The lack of other adequate tests and the support gained in the few positives obtained probably justifies performance of the test in suspect cases.

Virtually the same statements might be made about the serum lipase study although the rate of rise and fall is often somewhat slower. Normal levels reach the equivalent of 1.0 to 1.5 c.c. of a 1/20 normal sodium hydroxide solution and in acute pancreatitis may be elevated to the range of from 6.0 to 12.0 cc. In chronic inflammatory or neoplastic disease, perhaps a slightly greater number of mild elevations is found than with the amylase test although these still represent only a minority of the patients with such difficulty. Abnormality of the two tests is not always parallel so performance of both may be desirable.

Even with distinctly elevated levels, neither reaction is pathognoomonic of primary pancreatic disease. Markedly reduced renal function, penetrating peptic ulcers, high intestinal obstruction, peritonitis, various acute abdominal

crises, adrenal and hypophyseal disorders, mumps, and even pneumonia have been cited by various investigators as causes of increased serum levels of pancreatic enzymes. Usually such changes are of considerably less magnitude than those seen in acute pancreatitis(3).

Extensive destruction of the pancreas, either neoplastic or inflammatory, may result in a very low concentration of these enzymes in the serum. Such patients will not uncommonly present a steatorrheic picture which is differentiated from sprue only with difficulty. The gelatin digestion test of tryptic activity, utilizing a drop of feces placed on an x-ray film, is probably of value primarily in infants. In the adult, results are dependent on the bacterial flora of the intestine to a considerably greater extent than on pancreatic function.

Study of the enzymatic activity of the pancreatic secretion obtained by duodenal aspiration has been employed by many, but the considerable functional reserve of the pancreas limits the number of instances in which there is significant reduction in such activity, either a severe destructive process or major ductal obstruction being necessary to give conclusive results. This, plus the increased work and technical skill needed in their performance, has limited the use of such examinations. Possibly worthwhile in this connection, however, is the cytologic study of the duodenal aspirate. A rather high recovery rate of malignant cells by this method has been reported in patients with pancreatic tumors(4).

Of more value than is usually realized is the glucose tolerance test. In both chronic pancreatitis and carcinoma of the pancreas, almost half of the patients will show departure from the usual normal curve although the number who are frankly diabetic is considerably smaller. The flat oral tolerance curve of sprue, Whipple's disease and other intestinal absorptive defects is often useful in differentiation of the steatorrhea of these disorders from that of terminal pancreatic insufficiency.

Demonstration of a low serum calcium may occasionally offer some help in the diagnosis of acute pancreatitis with widespread fat necrosis. Hepatic function tests are at times of support in differentiation of jaundice due to pancreatic disease from that occuring in hepatitis, but it must be remembered that a mild hepatitis or cholangitis accompanies a certain number of instances of pancreatitis and may give confusing results. Gelatin and starch tolerance tests somewhat similar in principle to the oral glucose tolerance test, but additionally dependent on tryptic or amylolytic activity, have been devised, but are subject to the same considerations of pancreatic reserve applicable to direct study of the duodenal aspirate. From a negative standpoint, it should be noted that electrocardiographic changes somewhat similar to those of mycardial infarction may at times be associated with acute pancreatic disease.

In a suspect case, a diagnostic support may be sought in any and all of these laboratory resources without success. Far from excluding pancreatic disease, such failure only emphasizes the need of a careful, searching history, not only as it may indicate pancreatic difficulty, but as it brings into proper focus the possibilities of psychoneurosis and disease of other viscera. Radiologic and laboratory studies directed toward this latter end are also of major usefulness.

In the absence of definitive curative measures, treatment becomes in large part a matter of correcting so far as possible resulting anatomic and functional disturbances, and of relieving symptoms pertinent to involvement of the gland as such, rather than attack upon any specific etiologic or pathologic entity.

Usually, of paramount importance is the relief of pain. Despite theoretical consideration of their effect in producing spasm of the sphincter mechanism, and hence possible aggravation of pancreatitis, narcotics are usually effective. In the chronic and recurrent forms of pancreatitis addiction becomes a danger and actually occurs with some frequency. As an adjunct to narcotics, or as a substitute for them in milder attacks, attempts to block the sensory pathways from the pancreas may be of value. Tetra-ethyl ammonium chloride or procaine administered intravenously give assistance in this direction at times. More specific and persistent, although technically more difficult, is the direct injection of splanchnic pathways with procaine. Where this is successful, the surgeon may be called upon in chronic cases to attempt more permanent relief by splanchnicectomy, sympathectomy, vagotomy or a combination of these.

The second point of attack is upon the secretory mechanisms of the pancreas. The humoral

phase of this secretion is largely intiated by the appearance of gastric acid and food in the duodenum with the consequent release of secretin into the blood. Food is, therefore, withheld and continuous aspiration of gastric content maintained during acute exacerbations. Such aspiration also serves to minimize two of the more distressing symptoms, vomiting and abdominal distention. To lessen neurogenic contributions to pancreatic secretory activity, large doses of anticholinergic agents, such as atropine or banthine are in order. These have again additional value in also lessening gastric secretion and in reducing the tendency to vomit.

While bacterial infection is of little importance in the production of pancreatitis, the possibility of peritoneal invasion by intestinal bacteria as a result of the inflammatory increase in permeability of the tissues is a real hazard. On this basis there is probably a place for the use of antibiotics effective against these organisms in the management of acute pancreatic inflammation.

Shock developing in acute pancreatitis may be benefitted by plasma infusions on occasion. Reduction in the mortality rate in acute pancreatitis following large daily infusions of human serum albumin, possibly related to its antitryptic activity, has been reported(5). There has been report of improvement following cortisone in an extremely ill patient with pancreatitis(6). At times an acute diabetes may develop and requires treatment. Dehydration and electrolyte imbalance are frequent, especially if gastric aspiration is being utilized, and it may be necessary to administer parenteral water, sodium chloride, potassium, and perhaps calcium. Where biliary obstruction is present, hypoprothrombinemia may indicate use of vitamin K. Ascitic accumulations, persistent obstructive jaundice, or formation of pseudo-cysts or abscesses may require surgical intervention.

Interim medical management in recurrent inflammation is largely directed toward maintaining nutrition and minimizing the probability of exacerbation. Large meals should be avoided, and relatively bland foods are desirable. With insufficiency of the external secretion, the diet should be low in fat. Bile sales, emulsifying agents such as "Tween 80", or pancreatin in doses of several grams with each meal may be tried in the hope of lessening steatorrhea, but are often ineffective. Amino-acid digests may aid in supplying protein needs, in lieu of tryptic digestion. Theoretically, anticholinergic drugs are undesirable, as suppressing an already inadequate external secretion, but at times they may be of value in decreasing flatulence and excessive intestinal motility. Alcohol should be forbidden. Diabetes, if present, should be controlled. Any co-existing biliary tract disease should be corrected.

If in spite of these measures, recurrent attacks of pain continue, relief may be sought through one of several surgical procedures directed toward improving pancreatic drainage, lessening secretion, or blocking pain pathways. In carcinoma, the only measures available to us are analgesia, palliative surgical measures to relieve pain and jaundice and, very rarely, attempts to remove the neoplasm by means of pancreatectomy.

In summary, failure to give pancreatic disease major consideration among available diagnostic alternatives is probably the greatest single obstacle to diagnosis in this field. Where the possibility is entertained, positve help from the laboratory may be obtained in some cases, and may be definitive, but more commonly dependence must be placed upon a careful historical evaluation. Therapeutic measures are limited and inadequate, but early recognition and bold treatment offer considerably greater opportunity for palliation and perhaps cure than is the case when diagnostic hesitancy and therapeutic caution require far advanced and obvious disease before attempts are made to intervene.

REFERENCES

1. Hicken, N. F., and McAllister, A. J.: Am. J. Surg. 87:781, 1952.
2. Yaskin, J. C.: J.A.M.A. 96:1644, 1931.
3. Raffensperger, E. C.: Ann. Int. Med. 35:342, 1951.
4. Lemon, H. M.: N. Y. State J. Med. 51:2155, 1951.
5. Kenwell, H. N., and Wels, P. B.: S.G.O. 96:169, 1953.
6. Stephenson, H. E. Jr., Pfeffer, R. B., and Saypol, G. M.: Arch. Surg. 65:307, 1952.

THE POSSIBLE ROLE OF THE VERTEBRAL ARTERY IN AMYOTROPHIC LATERAL SCLEROSIS

A Preliminary Report With Case Study

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MULTIPLE sclerosis, amyotrophic lateral sclerosis, progressive muscular atrophy and a large number of so-called "degenerative" central nervous system diseases have remained etiologically obscure and therapeutically inaccessible.

The prevailing theories which include infection, endocrine disturbances, thrombotic and vasospastic phenomena, metabolic and toxic factors, etc., have remained totally speculative.

In the case of amyotrophic lateral sclerosis, a few outstanding clinical features are observed. These include the following:

1) The disease usually occurs in males above the age of forty-five.

2) There is usually some degree of "cervical arthritis" or at least hypertrophic changes of the cervical spine.

3) The onset is frequently unilateral, affecting at first one of the upper extremities, except where bulbar involvement produces the first symptoms.

4) The pathological changes within the CNS are mainly confined to the medulla oblongata and the upper cervical cord. The peculiar combination of upper and lower motor neuron involvement producing muscular wasting, fasciculations, and pyramidal signs, can be totally explained on the basis of involvement of the cervical cord and medulla. The changes in the lower extremities are usually much more spastic-pyramidal, while in the upper extremities the changes are more those of a lower motor neuron lesion with marked atrophy and fasciculations.

In reviewing these well-known clinical facts, it became apparent that in contrast to some of the other "degenerative" CNS diseases, amyotrophic lateral sclerosis can be explained by a lesion confined to a relatively small area in the medulla and cervical cord. In trying to correlate the pathological changes within the CNS and those observed in the cervical spine, the idea presented itself that the most important structure which is intimately associated with both of these regions, namely the vertebral artery, has not been previously studied in relation to amyotrophic lateral sclerosis.

The vertebral artery, as no other artery in the human body, has to traverse six relatively small foramina, the foramina transversaria in the cervical vertebrae, in order to reach its goal within the cranium. It was logical to assume that in certain cases of hypertrophic osteosis of the cervical spine these foramina could become involved, producing an embarrassment of the blood flow within this artery.

It was felt that if there were compression or embarrassment of this artery which carries the sole blood supply for the medulla and upper cervical cord, lesions similar to those seen in amyotrophic lateral sclerosis could well be produced.

With these ideas in mind, the following study was undertaken.

Case Report

J. A. G., white business executive, age 59, was referred to us on August 31, 1954, for terminal care.

The patient had been in good health until February, 1954, when he noticed hoarseness and a "rough area" at the base of his throat. Studies in San Francisco in March, 1954, including spinal fluid examination, were normal. Within fairly rapid sequence atrophy and weakness of the right arm and hand became apparent. Fasciculations in both arms occurred, and the speech became worse. There was regurgitation of liquids and drooling of saliva. He went steadily down hill witih marked fatigue and increasing weakness. There was no complaint of pain or disturbances of sphincter functions. Neurological examination performed by the referring physician in June, 1954, revealed excellent physical condition except for the wasting CNS illness. The tongue was fibrillating; speech and swallowing were difficult; and there were pyramidal tract signs of Babinski on the right, atrophy about the shoulder girdle on the right, and atrophy of the small muscles of the hand with fibrillations. Abdominal reflexes were absent. The patient was unable to maintain the right upper extremity in the horizontal position. There were no sensory disturbances.

In Phoenix the course was steadily down hill.

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and the patient insisted on going to a mid-western clinic where he was examined on October 15, 1954. In addition ot the neurological findings described above, electromyographic changes indicating widespread denervation and fasciculation were observed, compatible with amyotrophic lateral sclerosis. Biopsy specimen from the left biceps revealed non-inflammatory changes and numerous atrophic fibers as seen in amyotrophic lateral sclerosis. Roentgenograms of the skull were negative; those of the chest showed torsion of the aorta; those of the spine showed minimal hypertrophic changes in the cervical region. Sedimentation rate was 31 mm per hour; the blood count was normal. The spinal fluid was normal, including its dynamics. The diagnosis of amyotrophic lateral sclerosis was confirmed.

Late in October, 1954, the patient returned to Phoenix where he appeared much worse. His speech had become almost unintelligible, and he soon developed very serious difficulties in swallowing of solid foods, beginning to subsist more and more on liquids. The right upper extremity had become almost entirely useless, and the left upper extremity was much weakened. The gait was still fairly good.

On November 19, 1954, the patient was referred to a radiologist for radiological examination of the cervical spine with the specific question of any possible encroachment of the vertebral arteries. The examination showed considerable hypertrophic changes, especially about the articulations of the 3rd and 4th vertebrae, much more marked on the right. The foramina transversaria could not be outlined, but it was suggested that there was a possibility of narrowing with possible compression of the vertebral artery. (Figures I and II.)

On November 27th, the patient was referred to a neuro-surgeon for right vertebral arteriography. The results of the arteriogram are demonstrated in figure No. III, showing a complete loop formation of the artery at the area of the most marked hypertrophic changes near the 3rd vertebra.

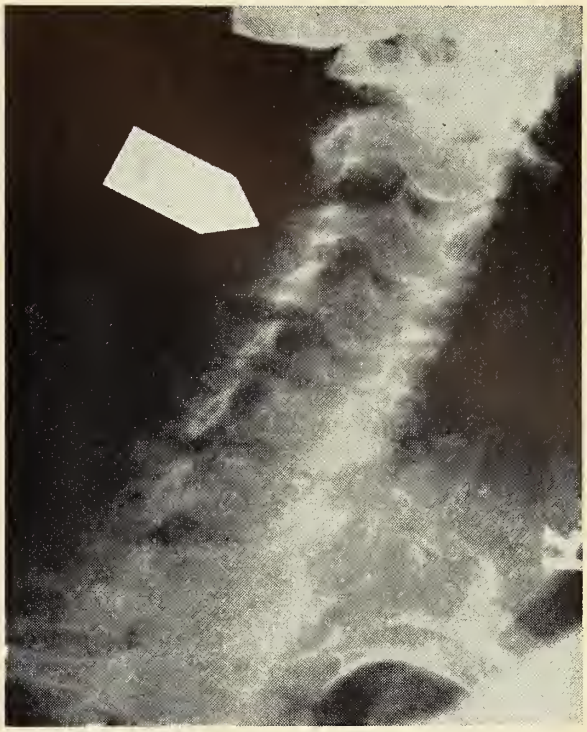


Fig. I. Cervical spine, right oblique view.



Fig. II. Cervical spine, left oblique view. Hypertrophic changes are seen about the posterior articulations of the 3rd and 4th cervical vertebrae, much more marked on the right.

Comment

The demonstration of unusual and heretofore unreported pathological changes within the vertebral artery in a case of amyotrophic lateral sclerosis raises the important question whether the blood flow within this artery could be sufficiently impaired to produce the pathological changes in the central nervous system.

The loop formation, whether of a congenital nature, or reactive due to embarrassment of the



Fig. III. Right vertebral arteriogram, showing complete loop formation at the site of the greatest hypertrophic bone formation.

artery within the foramen transversarium, could certainly be an impediment to proper circulation. It is possible, although of course not certain without further confirmation, that the proliferative bone changes fixed the pulsating artery within the foramen transversarium of the 3rd cervical vertebra, thus producing a recoil phenomenon, very much like a garden hose with running water which recoils on encroachment of its lumen.

The loop is in such a location that movement of the cervical spine could very well produce a "kink" and thus interrupt the blood flow temporarily. It is also possible that the blood pressure above the loop is considerably lower than below the loop because of eddy currents in the arterial channel.

Further studies are necessary to explain the nature of this peculiar behavior of the vertebral artery and its relation to amyotrophic lateral sclerosis. Surgical correction of this lesion of the vertebral artery is now contemplated and will be reported later. It is hoped that this report will stimulate research to confirm or disprove this theory.

THE ARIZONA FELLOWS OF THE AMERICAN COLLEGE OF SURGEONS

The College is holding its first Sectional Meeting of the coming year at Galveston on January 17, 18 and 19, 1955. An exceptionally attractive program has been planned, and a copy will be mailed to you well in advance of the meeting.

The six Texas Chapters of the College, representing more than 900 Fellows residing in Texas, extend a cordial welcome to the surgeons living elsewhere throughout the Southwest. The hotel and recreational facilities of Galveston assure you a pleasant time as well as one which will be profitable scientifically.

The "Island City" is the home of the large Medical Branch of the University of Texas, established in the early 90's. Its beautiful new John Sealy Hospital provides unusual facilities for the clinics which form a part of the College program. Just as Texans always think of a meeting in Galveston as one where old friends can get together, this coming Sectional Meeting offers surgeons of the entire area the opportunity to enjoy an excellent surgical program in an atmosphere of recreation and relaxation.

We urge you to attend:

A. E. WINSETT, President
Northwest Texas Chapter

HENRY N. RICCI, President
Second District of Texas Chapter

HOWARD O. SMITH, President
Third District of Texas Chapter

R. T. TRAVIS, President
Fourth District of Texas Chapter

JOHN A. HART, President
Fifth District of Texas Chapter

FELIX P. MILLER, President
Sixth District of Texas Chapter

ROBERT M. MOORE, Chairman
Committee on Arrangements

Note: Surgeons who are not Fellows of the College may also attend these sessions (Registration fee — $5.00).

PENTOTHAL SODIUM ANESTHESIA: A PHANTASY

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WITH the introduction of pentothal sodium to the anesthesiologist armamentarium by Lundy in 1934 its use has been advocated as the drug or anesthetic of choice for every surgical procedure requiring a general anesthetic.

By definition anesthetics are agents which (1) produce unconsciousness, (2) they are analgesic and (3) inhibit refllex activity. The barbiturates, to which class of compounds pentothal sodium rightly belongs, therefore, are not true anesthetic agents.

The barbiturates are hypnotics in that they will produce unconsciouness. They do not allay pain but may even in the presence of pain produce delirium. The barbiturates will readily produce unconsciousness which is desirable for the patient, surgeon, and anesthesiologist. It is for this simple fact that many patients request and surgeons demand an induction with pentothal sodium. This rapidity in induction frequently is a "snare and a delusion" hazardous for the patient, which is attested to by reviewing mortality reports. Pentothal sodium, while meeting one of the basic requirements of an anesthetic, falls far short of meeting the other two basic requirements, namely, providing relaxation and inhibiting reflex irritabillity.

That pentothal sodium is not an analgesic nor a relaxant is readily demonstrated during anesthesia. Anesthesia may be apparently satisfactory until a painful stimulus occurs causing the patient to move. Muscular relaxation may be accomplished with pentothal sodium but this requires the administration of large quantities of the agent far in excess of the limits of safety. Reflex activity and irritabililty may actually be enhanced in the presence of pentothal sodium anesthesia. This may be seen frequently in operations upon the neck when pentothal sodium has been the agent requested by either the surgeon or patient.

Pentothal sodium is a central nervous system depressant acting upon the coretx and respiratory center. It will produce psychic sedation, sleep and deep hypnosis. The responses of the patient will vary with the dose, rate of administration, absorption, destruction, elimination, and susceptibility of the patient.

Intravenous pentothal sodium anesthesia is unique in several respects which invite abuse. The ease with which it is administered is a distinct advantage, but this may also become a serious pitfall. It is a temptation to select the agent for its convenience rather than on the basis of what is best for the patient. It is equally tempting for the surgeon and anesthetist to be swayed by the desires of the patient who has heard of the "new wonder drug" or "shot in the arm" and request the same.

With unconsciousness produced in a matter of seconds, following the administration of intravenous pentothal sodium, it is often very tempting for the surgeon to operate before the patient is anesthetized. The painful stimulus evokes a reflex response on the part of the pationt so that he moves. This is usually interpreted as light anesthesia. The administration of more pentothal sodium is recommended, which leads to overdosage.

Overdosage occurs for several reasons: (1) Rapid induction together with impatience for the drug to attain its full effects. The time required for a given dose of pentothal sodium to reach its maximum effect is more than one minute and not fifteen to twenty seconds. (2) The arbitary administration of so many cc., per so often rather than the patient's response to the drug. (3) The administration at a fixed concentration rather than adjusting the concentration to the patient. A 2.5 per cent solution is satisfactory for the normal healthy person, but in the cachetic, ill and debilitated individual leads to overdosage. (4) The indiscriminate administration of more pentothal sodium whenever the patient moves. Movements of the patient do not indicate light anesthesia. The depth of respiration should be the guide for administering more pentothal sodium. With pentothal sodium the respirations are regular, but decreased in rate and amplitude. Since pentothal sodium depresses the respiratory center, the principal respiratory regulatory drive

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is through the carotid sinus mediated by hypoxia.

The treatment of overdosage is supportive management. No patient need die from overdosage if adequate facilities are available for maintaining pulmonary ventilation. This implies the use of a gas machine or a breathing bag and oxygen attachment. One should not administer pentothal sodium without such equipment available and ready to use. The analeptics have no place in the symptomatic treatment of overdosage. The respiratory depressant effects of pentothal sodium are transient and if oxygen therapy is instituted immediately the patient will respond without the use of analeptics.

The complication most publicized as occurring during pentothal sodium administration is laryngospasm. Laryngospasm is a manifestation of an active reflex pathway that continues to function during pentothal sodium hypnosis. Laryngospasm can be precipitated by any painful stimulus originating in any part of the body. More specifically, maneuvers such as rectal dilatation, urethral dilatation, and stretching of the mesentery will cause spasm of the cords. The insertion of a pharyngeal airway may also be the precipitating factor responsible for the development of laryngospasm. Equally responsible is the presence of moderate amounts of mucus or saliva in the pharyngeal passage.

Laryngospasm is more easily prevented than treated. It is easy enough to avoid laryngospasm if the anesthetist is alert. Laryngospasm may be avoided if five to ten minutes are allowed to elapse from the time of induction to beginning of surgery. Furthermore, since laryngospasm is considered to be a manifestation of increased vagal activity the administration of atropine sulphate 0.8 mg. (gr. 1-75) is recommended for preoperative medication. Since painful reflex stimuli will precipitate laryngospasm, pentothal sodium should not be used whenever potent reflexes are to be initiated or stimulated.

The unexpected onset of laryngospasm should be treated immediately by removing the causative stimulus when possible. If persistent, positive pressure oxygen, or helium-oxygen mixtures should be administered by the facemask. The insertion of an endotracheal tube may be indicated if the spasm persitsts. If one is thoroughly conversant with the pharmacological action of succinylcholine (anectine®) chloride it may also be used with beneficial results. Intratracheal administration of two cc. of a four per cent solution of cocaine has also been found effective in abolishing a persistent laryngospasm.

A frequent complication following pentothal administration is apnea. Apnea is an indication of negligence and results from the rapid administration of a concentrated solution of pentothal lsodium. Since it is impossible to estimate accurately how each patient will react to a given dosage the anesthetist should always anticipate apnea and be prepared to treat it with artificial ventilation. It need be reemphasized that an efficient means for performing artificial ventilation with oxygen must be immediately available whenever or whereever intravenous pentothal sodium anesthesia is used.

A complication which is frequently overlooked is that of bronchoconstriction or bronchospasm. This is due to the parasympathetic action of the drug. Inability to expand the chest with positive pressure should cause the anesthetist to suspect this condition. Treatment consists in discontinuance of the agent and administration of either atropine sulphate or aminophylline.

The direct effects of pentothal sodium upon the cardiovascular system are not as great those upon the respiratory system. Arrhythmias may occur under pentothal sodium but these are usually secondary to the hypoxia caused by the respiratory depression. The pulse rate may be slightly increased but this is of no significance. Upon the heart itself pentothal sodium has no deleterious effects. Experimentally, however, it has been shown that patients who are decompensated or receiving digitalis therapy respond poorly. The toxic dose of pentothal sodium is appreciably increased in animals who have received digitalis. Clinically this has not been confirmed.

The most frequent cardiovascular complication following pentothal sodium anesthesia is hypotension. Pentothal sodium being a medullary depressant one would expect cardiovascular collapse to occur. The blood pressure, however, is only slightly affected when pentothal sodium is given slowly to the normotensive individual. Rapid administration will cause a precipitous drop in the blood pressure and this is quite

evident in patients with hypertension. Pentothal sodium, therefore, should be used cautiously in a weak solution and given very slolwly to the hypertensive patient.

It need be mentioned here that pentothal sodium is definitely contraindicated in the presence of shock or hemorrhage. Patients undergoing surgery with pentothal sodium who develop shock or hemorrhage respond poorly to blood replacement therapy. The causative factor is unknown but is thought to be due to a peripheral vasodilation which occurs normally under pentothal sodium. Therefore, pentothal sodium should not be considered when excessive bleeding or shock is anticipated.

During induction of anesthesia with pentothal sodium the apprehensive and alcoholic patient may exhibit signs of delirium. Delirium may be interpreted as an excitement stage equivalent to that seen with ether anesthesia or more specifically second stage analglesia. This complication may be alleviated if a supplemental agent such as nitrous oxide is used. Postoperative delirium is occasionally seen and may be treated with a subemetic intravenous injection of apomorphine 0.4 mg. to 0.6 mg. This should be injected slowly over a period of five minutes. The patient will awaken from the sleep which follows quietly, without fear, excitement or apprehension.

Emesis is not commonly seen during induction when the gastrointestinal tract has been properly prepared for surgery. Postoperative nausea is seldom remembered because it usually occurs during the period of amnesia that follows awakening from pentothal sodium anesthesia. Nausea and emesis, however, will frequently be delayed for six to eight hours after the patient awakens and usually after the first light meal.

Several uncommon complications may occur due to errors in technique of venipuncture. An artery may be mistaken for a vein resulting in an intra-arterial injection. Spasm of the peripheral arteries ensues with blanching of the extremity together with severe pain. The injection must be discontinued at once; but intravenous anesthesia can be continued if the operative procedure cannot be postponed. If intra-arterial injection has occurred a stellate ganglion block must be done immediately to alleviate the vasospasm. Extravascular injection may also occur which is usually irritating to the tissue and slough may follow. The degree of tissue damage is dependent upon the concentration of the solution used. If such an accident occurs, normal saline should be immediately injected into the same area to dilute the pentothal sodium in an effort to reduce the possibility of tissue slough.

There are as many abuses of pentothal sodium as there are persons administering the agent. It should not be inferred that all persons abuse the agent, but the intravenous anesthetics readily lend themselves to several common abuses. The characteristic that leads to the greatest abuse is the ease with which it can be administered. Little skill is required to insert a needle into a vein and push a plunger on a syringe.

Since a minimum of equipment is necessary it becomes a great temptation to use the intravenous agents as the sole anesthetic. Since pentothal sodium is primarily a hypnotic and does not obtund reflexes nor produce muscular relaxation without profound medullary depression, it is not recommended for operation requiring relaxation.

Also of great concern to the anesthesiologist is the personal preference of the patient for pentothal sodium. This preference poses a special problem. Pentothal sodium has gained a great deal of publicity as the most pleasant of all anesthetics which in most respects is true. Patients fear the sight and smell of the operating room and dread the induction by inhalation anesthesia. With pentothal sodium, the fear of induction is minimized for unconsciousness comes on rapidly.

Patients many times insist upon an intravenous anesthetic without realizing the dangers involved. If the anesthetist is skilled, this may be of little significance, but if his experience is limited, he may be confronted with a request for a procedure with which he is not thoroughly familiar. He may be poorly equipped to deal with emergencies which may arise during such a procedure. The anesthetist should select the agent and method with which he is most familiar.

Surgeons often prefer an induction that is rapid and without delay. When pentothal sodium is used there is little waiting for the patient to be put to sleep. The operation can begin within several minutes after anesthesia is started. This rapidity of induction is the basis for another common abuse, an induction that is

far more rapid than necessary and much too rapid for the absolue safety and welfare of the patient. Induction with pentothal sodium should be slow and cautiously.

Following the initial injection of pentothal the cerebral blood concentration is quite high resulting in unconsciousness. A rapid fall in the blood level of pentothal sodium occurs, if additional amounts of the drug are not given the patient returns to consciousness. Pentothal sodium is removed from the circulation by the tissues of the body and is fairly evenly distributed throughout all the tissue, but ultimately accumulates in the body fat. When pentothal sodium is discontinued, the fat gives up the drug, returning it to the blood stream at a rate approximately governed by the rate of its removal from the blood by detoxification. If repeated injections of pentothal sodium are given, the body fat becomes saturated, then the only mechanism known to lower the blood level is detoxification which proceeds at a rate of approximately fifteen per cent per hour. Pentothal sodium then assumes the properties of a long acting barbiturate resulting in a prolonged and unnecessary postoperative depression. The use of pentothal sodium as the sole anesthetic agent in the obse patient is, therefore, contraindicated.

No rule can be laid down which will be a perfect guide in the selection of an anesthetic, but the alert anesthesiologist will concern himself with several factors before deciding upon what anesthetic agent is best in any given case.

(1) **The Patient:** Of prime importance is the patient himself. The anesthesiologist must familiarize himself with the physical status of the patient. All physical defects or disease entities should be noted. The circulatory system is of particular importance together with some idea of the patient's ability to withstand circulatory stress. The status of the respiratory system is of equal importance. The role of the liver is probably not so important as was once believed, but the anesthesiologist must take liver damage into account. It has been reported that pentothal sodium does not further damage a diseased liver nor is detoxification unduly delayed. It has been shown that the post anesthetic depression following pentothal sodium is increased if the blood non-protein nitrogen is elevated.

(2) **The Problem:** The problem involves largely the surgical diagnosis. This may have little bearing on the choice of an agent, but special techniques may be required depending upon the site of operation and the position of the patient on the table.

(3) **The Procedure:** No anesthetic should be selected on the basis of the procedure along. In similar procedures, requirements for anesthesia may be parallel, but patients differ in respect to physical conditions and, therefore, to tolerance of drugs and depressant effects.

The estimated time required for the operation must also be considered. If several hours will be required for the operation, it is advantageous to use supplemental agents, relying upon pentothal to accomplish no more than a pleasant induction for the patient.

Based, therefore, on the patient, the problem and the procedure, the anesthesiologist may choose that agent and technique he feels best qualified to manage.

It might be well to interject a word concerning the use of pentothal sodium in the extremes of age. There are many reports in the literature indicating that age of itself is no contraindication to the use of thiopental. This, in a sense, is true; however, the physician, in his own wisdom, must exercise a self imposed restraint commensurate with his experience that only he himself can determine. It is probably less important to emphasize age limits at both ends of the scale than it is dosage and technique of administration.

In the infant and young child, the basal metabolic rate is much higher than in the adult. The dosage required on a per kilogram basis is higher. This means that oxygen requirements are higher in children and hypoxia is not well tolerated. Certainly when used for children the gas machine designed for the adult must be adapted to the smaller vital capacity of the child and the dead air space reduced. The hazards and limitations of the intravenous administration of any substance is increased by the smallness of veins and the lack of cooperation in children. Smaller doses of dilute solutions make it easier to control the intravenous administration of a drug. The same precautions must be observed with children as with adults and apnea must be treated immediately with artificial ventilation and oxygen.

The aged patient requires a smaller dose because of a reduced metabolic rate. It is difficult to determine the degree of reserve strength

present in any given individual and age must not be disregarded. Elderly patients are but shells of formerly healthy persons who may have little or no reserve.

There are a few abuses with pentothal sodium that fortunately seldom occur, but deserve mention. Since pentothal sodium should be used only to produce unconsciousness, it must be used with caution in the unconscious patient. This may appear obvious on the surface, but if pentothal sodium is used to control the movement of an unconscious patient on the operating table, it may do so at the risk of producing further depression of the central nervous system. Adriani points out that the respiratory center is not only depressed, but that it also becomes less sensitive to the stimulating effect of carbon dioxide.

The contraindications for the use of thiopental are relative. It is of interest to note that as experience widens and skills increase, the list of contraindications becomes smaller and smaller. Certain safeguards, however, must always be kept in mind. There is no intrinsic safety factor built into any anesthetic. Skill is the greatest asset available to the person administering a potent depressant such as pentothal sodium.

PHOENIX Clinical CLUB

The Case History in this discussion is selected from the Case Records of the Massachusetts General Hospital, and reprinted from the New England Journal of Medicine. The discussant under Differential Diagnosis is a member of the staff of the Massachusetts General Hospital. The other discussants are members of the Phoenix Clinical Club.

MASSACHUSETTS GENERAL HOSPITAL PRESENTATION OF CASE

A Sixty-four-year-old man was admitted to the hospital because of inability to talk.

He was seen in the Out Patient Department three weeks before entry because of stiffness of the arms and legs and some difficulty in speaking. One week later, when he returned to the Out Patient Department, the following physical findings were noted: a right-facial nerve weakness, dragging of the right foot, increased tendon reflexes on the right with a right Hoffman reflex, equal hand grips and a blood pressure of 160 systolic, 90 diastolic. He improved somewhat, remained ambulatory, and had no difficulty other than the dragging of the right foot. Three hours before admission he suddenly pointed to his throat and made mumbling sounds, but was unable to form words; he also had some clumsiness when he attempted to put on his clothes to come to the hospital.

Phsyical examination revealed on obese, aphasic man. The fundi and ocular movements were normal. There was a questionable left hemianopia. There were paralysis of the right lower facial nerve, spasticity of the right arm with partial paralysis and a Hoffman reflex, and paresis and spasticity of the right leg; there was plantar extension on the right. Increased anteroposterior diameter of the chest with scattered coarse rales at both bases, more marked on the right, was noted. The remainder of the examination was noncontributory.

The temperature was 100°F., the pulse 108, and the respirations 22. The blood pressure was 140 systolic, 70 diastolic.

Urinalysis was negative. Examination of the blood showed a white-cell count of 10,800, with 88 per cent neutrophils, and a hemoglobin of 18 gm. per 100 cc. The nonprotein nitrogen was 30 mg. per 100 cc. A blood Wassermann test was negative. Lumbar puncture revealed clear spinal fluid under a pressure equivalent to 130 mm. of water, with normal dynamics; the fluid did not contain any cells. A roentgenogram of the chest showed the heart to be at the upper limits of normal in size, with some prominence of the left ventricle. The aorta was elongated and tortuous. The lungs were emphysematous. An electrocardiogram revealed a sinus tachycardia of 130, a PR interval of 0.16 second, a QRS interval of 0.07 second, normal voltage and axis with tendency to right-axis deviation and some clockwise rotation. There were low P waves in Leads 2 and 3 and low T waves in Lead 3.

On the day of admission the patient had a generalized convulsion. A lumbar puncture at

this time revealed a clear spinal fluid under a pressure equivalent to more than 100 mm. of ater. The fluid contained 4100 cells per cubic millimeter; of these, 2300 were white cells, 95 per cent of which were neutrophils, and the protein was 430 mg. and the sugar 139 mg. per 100 cc. No organisms were seen on a gram-stained smear.

Between episodes of increased spasticity and forced grasping of both hands the patient had bouts of extensor rigidity. A bilateral plantar extensor response developed. On the second day burr holes were made, with evacuation of a subcortical clot in the left temporal lobe. At operation there was normal pressure in the right ventricle; fluid from the ventricle contained 3200 cells per cubic millimeter, of which the majority were red cells, and 10 were neutrophils. Postoperatively he continued to have intermittent extensor fits, with a temperature spiking to 105°F., pulse of 140 and respirations of 50. Lumbar puncture seven hours postoperatively revealed a low spinal-fluid pressure, with turbid xanthochromic fluid that gave a 4 plus Pandy reaction; the fluid contained 2300 cells per cubic millimeter (92 white cells, 95 per cent of which were neutrophils. Postoperatively, the respirations were regular and deep at a rate varying between 20 and 30 per minute, with occasional bouts of Cheyne-Stokes respiration. The neck was not stiff. The eye movements were not abnormal except for an occasional side-to-side conjugate movement. The pupils were equal in size and reacted to light. The corneal reflexes were intact. There was no rigidity of any extremity and no response to pinprick. Deep tendon reflexes were present and equal on both sides except for slight accentuation of the right knee jerk. The plantar reflex was flexor on the left and extensor on the right. The patient continued in coma with hyperthermia and died on the third hospital (first postoperative) day.

DR. HOWARD LAWRENCE:

It seems probable that this patient had either some vascular disease of the brain or a neoplasm. Were this not a clinical club case, but just Mr. Average Patient, I would favor the former, i.e., cerebral vascular accident, but all things considered, we best not give this patient an average diagnosis.

Let us first briefly discuss various vascular diseases. There is no history of trauma to support a diagnosis of either extradural or subdural hemorrhage, then too, the clot which was evacuated was subcortical in location. This clinical picture isn't one of subarachnoid hemorrhage for the onset was too gradual and the initial spinal fluid was free of cells. The diagnosis of cerebral aneurysm seems unlikely. The initial symptomatology three weeks before admission did not include head or eye pain, commonly seen in cases of unruptured aneurysm. If the initial convulsive seizure on the day of admission had been the evidence of a ruptured aneurysm then there would have been blood in the spinal fluid.

The cerebral pathology could have been initiated by an embolus. The lungs or heart are the most common sources of emboli. The chest x-ray does not incriminate the lungs. The EKG findings suggest right heart strain but no positive evidences that valvular vegetations were present as sources of emboli.

The differential diagnosis of cerebral hemorrhage vs. cerebral thrombosis warrants our attention. I quote Alpers — "Softenings which occur as the result of arteriosclerosis are among the most commonly encountered lesions of the brain. Thrombotic softening is much more frequently the cause of the cerebral insults of old age than hemorrhage. The ratio has been variously computed but it is safe to place it at 3 to 1. In other words, 75 per cent of the cerebral insults due to arterial disease are due to cerebral thrombosis and only 25 per cent to cerebral hemorrhage." Characteristically, the onset of a cerebral hemorrhage is much more dramatic than the clinical picture given in the protocol. This patient's troubles could very well be explained by the following sequence of pathological events: (1) Thrombosis of the more distal branches of the left middle cerebral artery with resultant right facial weakness, dragging of the right foot, etc. (2) Bleeding into the area of softening occasioned by the thrombosis, evidenced clinically by the initial convulsion. (3) Progression of the encephalomalacia with extension into the ventricle, evidenced clinically by extensor fits, hyperthermia, and death.

But, as I said at the outset, I do not believe we can safely let this patient die with an average clinical story. Several other diagnoses could be considered.

The 18 gm. of hemoglobin is certainly abnormally high. The red blood count was not reported. Polycythemia rubra vera is a disease

suggested by this high hemoglobin report. Cerebral hemorrhages are not uncommon in this disease, (also, thrombosis of the longitudinal sinus with motor paralysis is a possibility). Yet, one would expect a prolonged history suggestive of the disease, and splenic enlargement would most certainly be found. Perhaps the high hemoglobin is best explained on the basis of the pulmonary emphysema.

Gliomas are the most common neoplasms found in this age group. Glioblastoma multiforme is the most common of the gliomas. I quote from Nielsen's textbook of clinical neurology, "It is a highly malignant growth occurring in the cerebrum (rarely in the cerebellum) of adults. It arises deep in the brain, at times in the basal ganglia, and is rarely removable . . . Bailey stresses the point that the hemorrhage and thrombosis occurring within the tumor mass furnish the most striking exceptions to the rule that intracranial tumors are characterized clinically by gradual progression of the symptoms."

My conclusion is that this patient had a glioblastoma of the left cerebrum into which there was bleeding and subsequently extension into the ventricular system. It would probably have been advantageous from a diagnostic standpoint to have carried out an arteriogram, or possibly an encephalogram, prior to the trephination.

Diagnosis:

(1) Glioblastoma multiforme, left cerebrum.

(2) ?Thrombosis of the left middle cerebral artery with rupture of the area of softening into the ventricle.

DIFFERENTIAL DIAGNOSIS

DR. MAURICE VICTOR

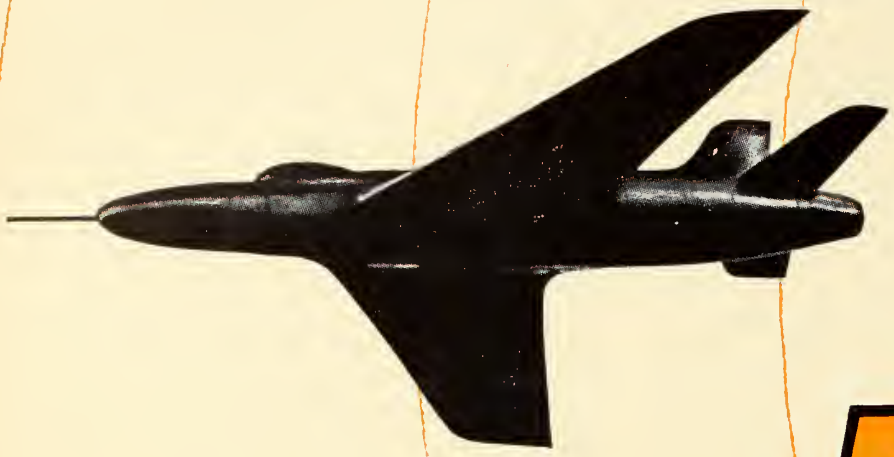
The clinical features requiring explanation that appear to be of importance in arriving at a diagnosis may be summarized as follows. The patient was a normotensive, elderly man, who was well until his present illness. The general physical examination was negative, except for mild emphysema and tortuosity of the aorta. The present illness, apparently of three weeks' duration, was subacute in onset and characterized by a right spastic hemiparesis and probably aphasia, although the description of speech defect does not allow me to say this with certainty. These symptoms were mild and not disabling until three hours before admission, when there was a sudden increase in the aphasic disorder, without impairment of the state of consciousness. The only significant spinal-fluid abnormality at the time of admission was a protein of 51 mg. per 100 cc. On the second hospital day the patient had a generalized convulsion. The spinal fluid now showed 2400 white cells per cubic millimeter, mainly polymorphonuclear leukocytes, about 1500 red cells and a markedly elevated protein and sugar. From this time onward deterioration was swift and progressive, with increasing coma, hyperthermia, fluctuating extensor postures of the legs and death on the third hospital day. After the second lumbar puncture, and probably prompted by the hope of discovering an abscess, the surgeons made burr holes and evacuated a subcortical blood clot from the left temporal lobe. This procedure did not seem to influence the course of the illness one way or another.

There can be no doubt, from even a cursory glance at the case history, that the patient suffered from a serious neurologic disease, to account for both his initial illness and his death. The precise neurologic disturbances and then sequential development remain to be explained.

Two ways of tackling this problem suggest themselves. The usual methodology that one employs in arriving at a neurologic diagnosis seems in this case to be superfluous. The necessity of translating symptoms and signs into anatomic and then pathological terms in largely precluded by the report of the surgeons' findings at operation. The fact is that there was a hematoma in the left temporal lobe; this information seems indisputable. I may therefore use this fact as the starting point of my discussion, and attempt to work the other historical data, signs and laboratory findings into a single feasible diagnosis.

There are only a few conditions that are capable of causing a hematoma in the temporal lobe. Trauma, spontaneous cerebral hemorrhage and bleeding from an aneurysm, from an arteriovenous malformation or from a tumor would all have to be considered.

Trauma is mentioned first, only because it can be dismissed most readily. There was no history of injury; conceding that the injury might have been trivial or overlooked, one would expect that a subcortical clot would have produced its maximal disturbance at the onset of the illness rather than three weeks after it began. The presence of a subdural hematoma need concern us no further — it would have



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been quite unlikely from the clinical data alone, and was excluded with certainty at the operation.

Next, one must exclude a spontaneous cerebral hemorrhage. It is the final episode of the illness, starting suddenly with a convulsion and progressing steadily to coma and death, that suggests this diagnosis. The three-week illness that preceded the hospital admission, characterized by a mild hemipharesis alone, remains unexplained. Furthermore, this man was normotensive, the hemorrhage was in the white matter of the temporal lobe, and when he was first seen the spinal fluid was under normal pressure and contained no red cells. All these features are quite unusual for spontaneous cerebral hemorrhage, which is predominantly a disease of patients with severe hypertension, usually affecting the central gray masses of the brain, with a bloody spinal fluid under increased pressure, and progressing relentlessly from the time of its first manifestation.

Similarly, only a weak case can be made for hemorrhagic infarction of the brain due to embolism. A source of emboli is not apparent. If the discrete episodes in the course of the illness are regarded as the effects of repeated embolism,it is unusual that they should all lodge in the same portion of the nervous system.

Could this possibly represent bleeding from an aneurysm or arteriovenous malformation? The three stages in the illness – namely, the three-week period of mild hemiparesis, the sudden episode of aphasia and the final episode of convulsion, coma and death – could have resulted from separate bleeding episodes. Again, however, a bleeding aneurysm would explain only one aspect of the illness, and I should have to overlook a group of clinical features that one ordinarily considers essential in making such a diagnosis. The first and second episodes were not accompanied by headache, clouding of consciousness, signs of meningeal irritation or subarachnoid hemorrhage. There are, of course, cases in which the aneurysm is set deep in the Sylvian fissure and, on rupturing, bleeds into the cerebral white matter as well as into the subarachnoid space, or even predominantly into the brain. This is the so-called meningo-cerebral hemorrhage. However, in the case under discussion there is no evidence from the clinical or laboratory data on the initial examination that there was any subarachnoid blood. Meningocerebral hemorrhage without a trace of subarachnoid blood is certainly outside the limits of my experience, and therefore I could not propose this diagnosis with any degree of confidence.

Finally, one must consider the possibility of bleeding from a tumor of the brain. It should be stressed that neoplasm presenting symptoms of apoplexy is a rare phenomenon. Yet it is a well recognized pathologic state, and worth considering for several reasons. In this case I must explain not only an obvious and terminal apoplexy but also a group of signs that preceded the final episode – namely, a mild hemiparesis, progressive aphasia and elevation of the spinal-fluid protein. The various other causes of cerebral hemorrhage, though statistically far more common than neoplasm, fail to account for both phases of the illness.

Brain tumors that may be complicated by hemorrhage include glioblastoma, chorioepithelioima, hypernephroma and, very rarely, medulloblastoma. There is nothing in the record to indicate that this patient was harboring a tumor elsewhere than in the brain; the likeliest tumor to be implicated in this case would therefore be an infiltrating glioma.

A final word of explanation is required regarding the spinal fluid. On entry to the hos pital there were no cells and only a slightly elevated protein content. One day later, after the seizure, the fluid contained 2400 white cells, mainly polymorphonuclear leukocytes, 1500 red cells, 430 mg. per 100 cc. of protein, and 139 mg. per 100 cc. of sugar. Cultures grew out nonhmeolytic streptococci. There are very few pathologic states capable of thus transforming the spinal fluid within one day. The possibility of a ruptured abscess at once suggested itself, and was excluded when the surgeon evacuated a hematoma. Aside from the operative findings, the evidence for abscess was slight. There was no history of a past illness that could be interpreted as the "invasion period" of the abscess; there was no obvious source of abscess such as infected ears, sinuses or lungs. Nor was the spinal-fluid formula prior to suspected rupture particularly characteristic of abscess – one would have expected a few lymphocytes and a protein in excess of 51 mg. per 100 cc.

A simpler explanation for the purulent spinal-fluid findings suggests itself, although it would be difficult to prove this point – that is, the

infection was actually not part of the basic disease, but was introduced at the first lumbar puncture. Meningitis is a well recognized complication of diagnostic lumbar puncture and spinal anesthesia. The organism, most often introduced in this manner is Pseudomonas aeruginosa (Bacillus pyocyaneus), but many other organisms have been implicated, including nonhemolytic streptococci.

My diagnosis are glioblastoma multiforme of the left cerebral hemisphere, with terminal hemorrhage and iatrogenic purulent meningitis.

CLINICAL DIAGNOSIS

Cerebral hemorrhage, left temporal lobe.

?Basilar artery thrombosis.

?Brain abscess.

DR. VICTOR'S DIAGNOSIS

Glioblastoma multiforme, left cerebral hemisphere, with terminal hemorrhage.

Iatrogenic purulent meningitis.

ANATOMICAL DIAGNOSIS

Glioblastoma multiforme, left cerebral hemisphere, midbrain and pons, with hemorrhage.

PATHOLOGICAL DISCUSSION

Dr. Edward P. Richardson, Jr.: In his excellent discussion of this case, Dr. Victor has arrived at the correct diagnosis. The significant post-mortem findings were confined to the brain. On external inspection, the left cerebral hemisphere was enlarged as compared with the right, and its convolutions were flattened. Furthermore, the left cerebral peduncle and left side of the base of the pons were widened. Sections of the brain disclosed a deeply situated, infiltrating tumor in the white matter of the posterior limb of the internal capsule and of the posterior part of the temporal lobe. Within the tumor were irregularly scattered foci of necrosis and hemorrhage, and lateral to it there was a large intracerebral hemorrhage, which had been surgically entered from the surface. Similar tumor tissue was found in the left cerebral peduncle and in the left half of the pons.

Microscopical examination showed the tumor to be a densely cellular neoplasm in which some of the cells resembled well differentiated astrocytes, whereas others were pleomorphic and totally undifferentiated surrounding grossly visible, dense masses of tumor cells. The brain tissue was infiltrated by neoplastic cells for a considerable distance. There were numerous large vascular channels within the tumor, frequently surrounded by extravasations of fresh red blood cells, and the blood in the large hemorrhage appeared fresh.

This obviously malignant tumor, of which the basic cell type is the astrocyte, is generally classified as glioblastoma multiforme. These tumors, rapidly growing and infiltrating, are often extremely vascular and contain numerous fragile blood vessels, in association with which small or microscopic hemorrhages are a common finding. It is, however, most unusual for them to be associated with massive cerebral hemorrhage, as occured in this case. It should be emphasized that brain tumor in general is a very rare cause of extensive bleeding into the brain. There was no evidence either grossly or microscopically of meningitis. Dr. Victor's explanation of the leukocytes in the cerebrospinal fluid cannot now be proved or disproved. It is possible that accidental infection of the subarachnoid space occurred at the time of the first lumbar puncture and that this cleared up under antibiotic treatment.

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Stone & 3rd Pharmacy, Tucson
Sunnyslope Drugs, Sunnyslope

Trince Orthopedic Shoe Shop, Tucson
Tucson Tumor Clinic, Tucson

Mabel Unger Rest Home, Phoenix
United Medical & Rentals, Phoenix
Upjohn Co., Kalamazoo, Michigan

Villa View Rest Home, Phoenix

Wayland's Drug Store, Phoenix
Western Bio-Chemical Corp., Phoenix
Williams Insulation Co., Phoenix
Wilton Hotel, Long Beach, California
Wine Advisory Board, San Francisco, California
Winthrop-Stearns, N. Y.
Wyeth Inc., Philadelphia, Pa.

Amebiasis[1] a "Poorly Reported" Disease

Until serious complications arise, amebiasis may pass unrecognized and patients receive only symptomatic treatment.

Although amebiasis is a disease with serious morbidity and mortality, statistics on its incidence[1] are incomplete because its manifestations are not commonly recognized and consequently not reported.

"*Vague symptoms*[2] *referable to the gastrointestinal tract, such as indigestion or indefinite abdominal pains, with or without abnormally formed stools, may result from intestinal amebiasis. Not infrequently in cases in which such symptoms are ascribed to psychoneurosis after extensive x-ray studies have been carried out, complete relief is obtained with antiamebic therapy.*"

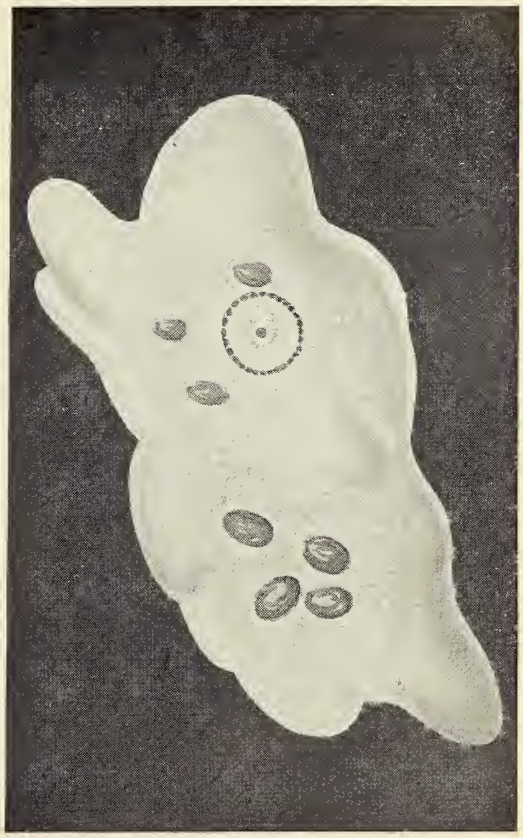
To prevent possible development of an incapacitating or even fatal illness and to eliminate a reservoir of infection in the community, diagnosing and treating[3] even seemingly healthy "carriers" and those having mild symptoms of amebiasis is advised.

Early diagnosis[1] is important because infection can be rapidly and completely cleared, with the proper choice of drugs and due consideration for the principles of therapy. For treatment of the bowel phase these authors find Diodoquin "most satisfactory."

For chronic amebic infections, Goodwin[4] finds Diodoquin to be one of the best drugs at present available.

Diodoquin, which does not inconvenience the patient or interfere with his normal activities, may be used in the treatment of acute or latent forms of amebiasis. If extraintestinal lesions require the use of emetine, Diodoquin may be administered concurrently. It is a well tolerated and relatively nontoxic orally administered amebacide, containing 63.9 per cent of iodine.

Diodoquin (diiodohydroxyquinoline), available in 10-grain (650 mg.) tablets, reduces the course of treatment to twenty days (three tablets daily). Treatment may be repeated or prolonged without serious toxic effect. It is accepted by the Council on Pharmacy and Chemistry of the American Medical Association. G. D. Searle & Co., Research in the Service of Medicine.



Endamoeba histolytica (*trophozoite*).

1. Hamilton, H. E., and Zavala, D. C.: Amebiasis in Iowa: Diagnosis and Treatment, J. Iowa M. Soc. *42*:1 (Jan.) 1952.

2. Goldman, M. J.: Less Commonly Recognized Clinical Features of Amebiasis, California Med. *76*:266 (April) 1952.

3. Weingarten, M., and Herzig, W. F.: The Clinical Manifestations of Chronic Amebiasis, Rev. Gastroenterol. *20*:667 (Sept.) 1953.

4. Goodwin, L. G.: Review Article: The Chemotherapy of Tropical Disease: Part 1. Protozoal Infections, J. Pharm. & Pharmacol. *4*:153 (March) 1952.

WHEN WRITING ADVERTISERS PLEASE MENTION THIS JOURNAL

THE *President's* PAGE

Holiday Greetings

OSCAR W. THOENY, M.D.

PRESIDENT, ARIZONA MEDICAL ASSOCIATION, INC.

Editorial

ARIZONA MEDICINE
Journal of
ARIZONA MEDICAL ASSOCIATION, INC.

VOL. 11 DECEMBER, 1954 NO. 12

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The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.
2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. (See MEDICAL WRITING by Morris Fishbein).
3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.
4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.
5. Submit manuscript typewritten and double-spaced.
6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.

The Editor is always ready, willing, and happy to help in any way possible.

CAUTION?

THE POIGNANT cover of "Look", October 5th, 1954, with the caption, "Are Your Doctor Bills Padded?" must have been great for sales. The article by the same title discloses nothing about the padding of doctor's bills, except the last paragraph which refers the readers, if they suspect padding, to their Medical Society's Grievance Committee. The text of "Are Your Doctor's Bills Padded?" can be classed with others, to cite a few: "The Doctor's Conspiracy In Silence," "Why Some Doctors Should Be In Jail," "Patients For Sale," "Watch It, Doc!" "How Much Should Your Doctor Charge?".

Again, we must have been ranked high because "dirt" is more salable if it incriminates the renown. If the public and our profession are to be benefitted by such an expose, we would be the last to withhold our plaudits. However, if the whole medical profession is discredited by the repetitious exposure of the few erring doctors, and the prejudicial presentation of subject matter proves to be a cold war of class-against-class; then our present society shall crumble. Such a method has been proven effective by Hitler, Mussolini, Lenin and Stalin. Those who perpetrate such licentious implications should be repeatedly reminded of Lenin's statement when he proclaimed socialized medicine to be "the keystone of the arch of the Socialist state."

"Are Your Doctor Bills Padded," true to form, is biased by incomplete statements, quotation of the exceptions, its narrow range of comparisons, and by inference. It implies to its readers that the higher cost of medical care is unique and disproportionate, which a full recitation of the facts would belie. If not wholly for their sales value, these unqualified statements must have been made to soften the medical profession for something to come in the future.

The author implies that it is antisocial that a few families spend a high per cent of their income to protect their health — their most valuable asset, whereas, he does not mention what should be done to help those who lose all their worldly possessions by Acts of God. He compares our earnings to those of college professors and factory workers and by quotations, challenges that the discrepancies in incomes are unjustified. He fails to criticize our social system which condones individuals becoming wealthy from profits made by the sale of the essentials of life such as food, even though part of their profits come from those who are so poor that the medical profession renders them free medical care. Nor does he mention our way of life which allows people to become wealthy by unearned incomes from exploitation of our natural resources — or the sale of land and houses necessary for sheltering the poor.

When the medical profession is conquered our social planners will then turn and destroy other essential segments of our social structure. It is to be lamented that for "sales" many of our "popular writers" are blinded, and are no more aware that they are undermining their own palaces, than are their readers who make their sales possible.

What are the present facts as regards Governmental Medicine? We are closer than most realize. The 1954-55 budget of our government for health is over two billion dollars. This is eight per cent above the preceding year and is sixteen per cent of the total private public expenditures for health. In what other socialistic venture has our government gone so far?

We have just returned the balance of power of the legislative branch of our government to a party which has favored the extension of all governmental regulations in all fields. Will their trends of the past be enlarged? Will Oscar Ewings return? We must be alert; we must be cautious in our own affairs; we must be cautious and determined that those who represent us do not destroy our social system. We must keep ourselves, the public, and our legislators informed as to what is good for all.

People, including our representatives in government, learn and are impressed by what they read — so let us furnish them with something to read and not let them form their opinion from the too frequently biased articles which appear on our news stands or yes, even some of those which come from our government presses. It is the responsibility of all of us to disseminate pertinent information. Do not entrust this decisive job to any selected group.

L.B.S.

PLANS SET FOR CME'S 1955 CONVENTION IN L. A.

OUTSTANDING lectures, panel discussions, and luncheon panel meetings, along with refresher courses, scientific and technical exhibits, and women's activities, will be featured at the 1955 Alumni Postgraduate Convention in Los Angeles next February 15 to 17, Dr. William F. Quinn, General Chairman of the Convention's Governing Board, has revealed.

The three-day convention, sponsored by the Alumni Association of the School of Medicine of the College of Medical Evangelists, is open to all physicians regardless of their school affiliation. Usually around one-third of the physician registrants are non-CME graduates. The Convention is geared primarily to the needs of general practitioners.

The Scientific Assembly meeting from Tuesday through Thursday at the Biltmore Hotel, is preceded by two days of refresher courses on the CME's Los Angeles campus at the White Memorial Hospital. These courses are also planned primarily for general practitioners and are open to all physicians.

Requests for information about the 1955 APC should be addressed to the Managing Director, Walter B. Crawford, at 316 North Bailey Street, Los Angeles 33, California.

AMERICAN ACADEMY OF FORENSIC SCIENCES

The Seventh Annual Meeting of the American Academy of Forensic Seiences will be held in the Biltmore Hotel in Los Angeles on February 17, 18, 19, 1955. The President of the Academy this year is Dr. A. W. Freireich, Malverne, New York and the Chairman of the Program Committee is Dr. Milton Helpern, Chief Medical Examiner of the City of New York. The Law Department of the American Medical Association has long urged that the profession take an increasing interest in medicolegal problems and the programs of the Academy meetings are a definite step in that direction. Further information, may be obtained by writing Dr. W. J. R. Camp, University of Illinois College of Medicine, 1853 W. Polk Street, Chicago, Illinois, Secretary, or Dr. Frederick D. Newbarr, 109 Hall of Justice, Los Angeles 12, California, Chairman of Local Committee on Arrangements.

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TOPICS OF *Current Medical* INTEREST

RX., DX., AND DRS.

By GUILLERMO OSLER, M.D.

THE giant chest surgeon (in every respect), Dr. Paul 'Buck' Samson of Oakland, tells us of the Atlantic City meeting of the AMERICAN ASSOCIATION FOR THORACIC SURGERY. So, we tell you . . . The dates are April 24, 25 and 26, 1954. A bit early for swimming, but it will make a wonderfully concentrated meeting . . . The headquarters is in the Chalfonte-Haddon Hall, one of the best on the boardwalk . . . The Journal of Thoracic Surgery gives the details each month on how to submit abstracts, etc. If eligible and/or interested you could have a grand trip by way of beautiful Washington, Philadelphia, New York, or El Paso.

The biggest drug news (and the biggest drug adv't) of the fall season is "MYCOSTATIN" (Squibb Mystatin). This new antibiotic is 'narrow spectrum', and is said to be effective only on MONILIA . . . The announcement was made in the newspaper — size 'Squibb News'. (The only other front-page item was "Steclin", the brand of Tetracycline made by the same company) . . . Any drug which proves to be effective on a fungus is news. A preparation which hits monilia would be good for the primary or secondary infections which have occasionally turned up in the past, but wonderful for the overgrowth of monilia which occurs in the intestinal tract during therapy by broad-spectrum antibiotics. Anorectal moniliasis is a resistant, persistant, and unpleasant syndrome, and we hope that Mycostatin works as well as they say it does.

TERRAMYCIN (Pfizer brand of oxytetracycline) has now reached the age where it has been used from 1 to 3 years as a PROPHYLACTIC in nephrotic and rheumatic fever cases. It is said to be almost free from toxicity or loss of effectiveness after many months. . . . One report stresses the complete absence of allergic reactions in 800 patients with topical use of the drug. . . . Pfizer also boasts of its ANTI-PROTOZOAL AGENT "Flagecidin" (Anisomycin), effective against trichomoniasis and amebiasis. This is another "we-shall-see" drug.

The Pfizer 'Spectrum' in the J.A.M.A.) recently contained a summary of "ACUTE PHASE REACTANTS". The term, which at first sounds like double-talk, applies to a group of changes which occur in acute infections. They can be diagnostic of the acute phase, they may indicate how tissue injury occurs, and they may show defensive attempts. . . . The SEDIMENTATION RATE depends on the concentration of certain proteins in the plasma and serum. C-REACTIVE PROTEIN is an alpha globulin which is an index of activity, especially in rheumatic fever. Carbohydrates may be indicators, including SERUM POLY-SACCHARIDE, HEXOSAMINE, et al. Serum microprotein and antihyaluronidase are other and more obscure substances. . . . Someone will, or should, correlate this group with fever, clinical symptoms, treatment, and each other for better practical value.

Tucson's Dr. W. Paul Holbrook spoke in Los Angeles to a recent general practice convocation. He stressed the PREVENTION OF DEFORMITIES and crippling in arthritis. Said it was possible. He said so when aspirin was the standby, and all through the ups and downs of cortisone. . . . Said climate helps about 20 per cent of the cases of rheumatoid arthritis. (Come home and explain this low, honest percentage, Paul!) It is about the same per cent Shutzbank reported for asthma.

A report from Washington suggests that we can be watching for more information on TWO NEW STERIODS which the National Institute of Health says are helpful for arthritis. They are called METACORTANDRALONE and METACORTANDRACIN, made by the Schering Corp. . . . The early claims are cautious, but eleven tough cases have shown a notable response. The amount available is scanty, and will be for 8 to 12 months. Side-effects are rare, so far. The potency is several times that of cortisone, so that the dose is only 5 to 25 mg., given orally. The serious cortisone side-effects are said to be absent. The drugs have not yet been tried on the other diseases for which cortisone has been used. . . . Eleven cases are so few that we shouldn't mention them if they were done in the White House.

Here is a treatment which takes a person back 10 or 15 years. Bryson of Cleveland reports in the 'American Surgeon' that 91.4 per cent of 426 patients had good results from a COBRA VENOM preparation. . . . Here we are, surrounded by cortisone and huge piles of aspirin (as well as even newer drugs), and the man reports on cobra venom. It is called 'Nyloxin', and is composed of the venom plus formic and silicic acids. . . . In view of past trials with bee stings, etc., etc., and in view of the other use of snake venom, this

report should be considered with caution until confirmed.

If one can credit an advertising paragraph in 'Hospital Topics', the perfect PRE-OPERATIVE DEPILATORY has arrived. . . . It is stated that a material called 'Pellex' can be applied for 10 minutes to the area, followed by a clean loss of hair at skin level and no evidence of toxicity . . . It could be very handy in case that orderly who can shave is not available and in case it should actually be free of irritation.

The same trade journal also tells of a boon to the linen-room. The Huges Co. makes a white PATCH to be used for holes, rips, and tears in all kinds of white-goods. It is ironed-on, will launder but not fray or stiffen, and should be a good 'deal' if the sheet or pillow-case has not gone completely to pieces.

Pendergrass and his associates at the University of Pennsylvania have been working on high-voltage x-rays for several years. They call it 'DIAGNOSTIC SUPERVOLTAGE RADIOGRAPHY', and it is said to overcome the disadvantages of too little or too much exposure. . . . By some strange phenomenon the bones and other dense tissue are penetrated without obliterating the soft-tissue (lung structures. Films of the chest look as though they were taken with a grid technic, and the trachea and bronchi show up as they do in planigrams) . . . The total dose can be kept within safe limits. . . . The equipment, of course, is not yet available, and will cost 55,000 to 95,000 dollars.

A list of the FACILITIES of a new and MODERN hospital reads like our memory of 'Popular Mechanics'. Hardly believable. . . . Mt. Sinai in Los Angeles is typical. Voice intercoms; pneumatic transport of medicines; bedside control unit for lights, radio, and signals; pillow radio receivers; oxygen piped to rooms through the walls; food handled on a conveyor belt in vacuum containers; case-history taken before admission, sent to floor before the patient arrives; etc. . . . The patients are probably old-fashioned, though. The cost per bed isn't: — $12,000.

Years ago a friend of ours was said to have a mild CARDIAC DAMAGE, and the cause was decided to be a possibly INFECTED GALL-BLADDER. Since he was relatively young (35 years and relatively wealthy) it was suspected that the subsequent cholecystectomy might not be on a strictly scientific basis. . . . Now, 20 years later, his heart still bears up well. . . . This may or may not be proof of the old focal infection theory, but a publication by H. A. Patterson of New York (in the Annals of Surgery) is a surprising confirmation of the use of surgery. He believes that the patient with coronary disease may improve after removal of gall-stones; that this may be due to removal of nerve stimuli from the organ; and that the cardiac damage may be reversible.

Do you know the topics which might be included in a symposium on Blood Banks? The list is interesting and sometimes strange (Am. Jour. Clin. Path.) . . . 'The Use of Whole Blood and Fractions', 'Sterilization of Blood Plasma' (ultraviolet radiation is approved but not very effective; beta-propiolactone is a chemical with promise). 'Transfusion Reactions' (prevention is best; therapy is by antihistamines). 'The Use of A and B Substances' (carbohydrates which increase antibody titers). 'The Coombs Antiglobulin Test'. 'Rare Isoagglutinins' 'Rh-Hr Factors'. 'ABO Blood Groups'. 'Preservation of Blood' (it can be stored for four weeks under ideal conditions, or two weeks by most methods). Requirements for Donors' (and its a wonder anyone qualifies! (Data on who you are; pernit; medical history; physical exam., they say; super physical condition; proper diet before donation; limitation of contributions; exclusion of those who have had TB, brucellosis, coronaries; recent rheumatic fever, low cardiac reserve, pregnancy in past six months, recent respiratory infection, asthma, active allergy, latent blood dyscrasia, and dental extraction in past month. WOW!)

A report from Copenhagen by Clemmesen makes the management of BARBITURATE AND MORPHINE POISONING seem very simple. To back it up he quotes a reduction of mortality in that city from 25 per cent to 1.6 per cent in six years. . . . The prime principles are: 1. anti-shock therapy; 2. continuous administration of oxygen; and 3. the maintenance of patent airways. They have abandoned gastric washings, and usually withhold stimulants (which may cause fatal hyperthermia). . . . One hospital (Bispebjirg) cares for all cases in the area of Copenhagen, and has special facilities and staff. Special charts, special blood studies, and special nursing are used. Oxygen is given through a hollow tongue depressor. A 'shake-up' is done every two hours, with aspiration of the air passages. About 2 liters of fluid and 300,000 units of penicillin are given parenterally per day. . . . Plasma is given for hypotension. A heat cradle is used for low temperature levels. Several other items are used in the technic, but amphetamine is used not to stimulate respiratory paresis but to increase flow of blood through peripheral veins. . . . This routine seems incomplete from the American viewpoint which often is concerned with WHICH stimulant to use.

"W. C. A." (Dr. Walter Alvarez) writes on 'CANKER-SORES' in his small journal 'Modern Medicine'. This is one of the commonest problems in general practice, as on can see by scanning the columns of 'Minor Notes and Queries' in the J.A.M.A. for the past 20 years. . . . Everyone has his own favorite ETIOLOGY — virus infection.

HBA FOR SECURITY

THE HOSPITAL BENEFIT Bulletin

Special Published Bi-Monthly by the Hospital Benefit Association, First Street at Willetta, Phoenix December, 1954

Question Quiz
Do you know the answers?

Q. When a question arises regarding payment of hospital or surgical benefits, is the final decision made on the basis of the patient's story?

A. No. In such cases, of course, the patient is given every opportunity to explain his or her reasoning. But the final decision must be made on the basis of the actual hospital records. That is why it is so important that doctors and hospital officials make sure the records are complete and accurate.

Q. In addition to maintaining accurate hospital records, is there any other way the physician can help speed payment of his bill?

A. Yes . . . a very simple way. Just be sure to send us the filled-in billing form promptly! Believe it or not, settlement of some cases is held up for weeks because the doctor does not get around to sending us a bill. Once we receive the bill, we try to send a check within three to five days.

Q. Several patients have asked me if the HBA Surgical Plan pays for home calls or office calls for treatment of accidental injuries. Does it?

A. Yes. HBA surgical schedules provide for treatment of accidental injuries anywhere, provided such treatment is administered within 24 hours after the accident. The HBA does not, however. pay for medical treatment of illnesses.

Q. May an X-ray also be taken at a place other than a hospital in case of accidental injuries?

A. Yes. The Surgical Plan also provides that an X-ray of a fracture or dislocation may be taken at a doctor's office or an X-ray laboratory if taken within 24 hours after the accident.

HERE'S WHY WE REFER TO "HOSPITAL RECORDS"

The Hospital Benefit Association realizes that the doctor-patient relationship involves more than just medication, bone-setting and surgery. The patient invariably considers his doctor as a trusted friend, which is always helpful therapy in itself.

Therefore, we do all we can to help you maintain a happy relationship with your patients.

For example, we get a case once in awhile that's highly "questionable" as to whether or not a policyholder is eligible for benefits for hospitalization or surgery due to a condition excluded under the policy or a pre-existent condition. Usually, it's information we get from that doctor that settles the issue.

However, we see no point in putting you on the spot with the patient. So, we **never** say, "We're sorry, but your doctor says he was treating you for this condition five years before you joined HBA." Instead, we tell the patient that "Hospital records show thus-and-so." This way, the onus is put upon the cold, impersonal hospital records, and it doesn't occur to the patient to criticize you for not turning in a biased, untruthful report so that benefits might be paid . . . even though you would like to see the patient get the benefits.

You Can Be Frank On Reports

Since it is our policy to hold your reports in strictest confidence, you may be completely frank in what you say. In fact, the more accurate and complete the records are, the better it is for you because final settlement can be made immediately without asking you for additional information.

Claim Forms

While any claim form is a bother, you must remember we ask the doctor to fill one out in only a little over 3% of the cases, not 100% of the time. These are instances when we need all the information we can get from the doctor in order to arrive at a fair and equitable decision regarding benefits. So, we appreciate your patience and cooperation in bearing with us when, occasionally, we do ask you to fill out a claim form.



**We, at
Hospital Benefit Association,
sincerely hope
that
Santa Claus brings
you all your
heart's desires
because
you, through your
generous cooperation,
have made life so
much more pleasant for us.
Thank you, Doctor . . . and**

Merry Christmas!

PLASTIC EASEL CARD CUTS DOWN RED TAPE

Sometimes HBA members will forget to present their Membership Cards when they go to physicians' offices for emergency treatment of accidental injuries. This, of course, leads to a certain amount of paper-work and delay in payment.

To help eliminate this situation, we have for your waiting room table a small (7¼" x 4"), neat plastic easel with a card reminding your HBA member-patients to present their Membership Cards so you will know of their HBA protection.

The easel and card are free for the asking. For yours, just have your girl phone our Phoenix Office at ALpine 8-4888 or our Tucson Office at 3-9421.

trophic causes, arterio-sclerosis of the brain, a difference in electric potential between dissimilar fillings, etc. . . . Dr. W. C. A. has his own, and a personal one at that: FOOD. In his case it is chocolate. In other cases, according to Dr. Albert Towe, it is an allergy to chocolate, tomatoes, pineapple, or pork. . . . Dr. Paul Foster, a Los Angeles medico-political figure of reknown, has (surprisingly to some) written a very fine little summary of causes. This spreads the blame, and makes the choice tougher for the G.P.

EUTHANASIA is a tough subject for doctors. They may be quoted in or out of context, for what they have said on the subject. . . . They may also be quoted for what they haven't said, as in the story about Dr. Hugh Cabot, once of the Mayo Clinic. He asked a medical audience "Will those of you who have never put a hopelessly diseased patient out of his misery please raise your hands?", and no one did. . . . (And like the other articles, we have just dragged in the names of a famous man and clinic). . . . One can read about the subject in many odd places, and they all quote the petition to the New York State Legislature, and the preservation of life from infections for more horrible ends by degenerative and neoplastic disease. . . . The publication we have just seen is not exactly scientific. Actually the people in the Euthanasia article ("I Have Killed For Mercy!" in 'SEE' Magazine) were the ONLY ones with clothes on.

Another, more dressy, non-medical publication (TIME MAG.) quotes Pillemer of Western Reserve on the discovery of a protein which may be the "Something" which gives the body the power to destroy 'germs'. . . . The material has been labelled 'PROPERDIN' (not propadrine', which is a type of nose-drop). Properdin is non-specific, and fills the gaps which exist between antibodies for specific infections. It destroys or neutralizes a wide range of bacteria and viruses. . . . Better not try to buy any for a while.

ANNUAL MEETING SCIENTIFIC SESSIONS

THE 64th Annual Meeting of your Association will be held in Tucson, May 4-7, 1955, with headquarters at El Conquistador Hotel. Through arrangements made by the Scientific Assembly Committee, we are happy to announce participation of the following two guest orators who will appear with others on the scientific sessions program.

PHILIP D. WILSON, M.D.



Philip D. Wilson, M.D.
New York

Receiving his Bachelor of Arts degree at Harvard College and his medical degree at Harvard Medical School in 1912, Dr. Philip D. Wilson has been Surgeon-in - Chief at the Hospital of Special Surgery, New York City, since 1935; Director of the Orthopaedic Division, New York Hospital, since 1951; and Clinical Professor of Surgery (Orthopaedics) at Cornell Medical College, 1951. During the years 1943-46 he was Civilian Consultant to the Surgeon General; in 1947 Chevalier of Legion of Honor (France); Honorary Commander, Order of British Empire, 1948; and member of numerous medical societies.

RICHARD HAROLD FREYBERG, M.D.



Richard Harold Freyberg, M.D.
New York

Graduate of the University of Michigan Medical School, Ann Arbor, Michigan in 1930, Doctor Richard Harold Freyberg has interned at the University Hospital, Ann Arbor 1930-32; instructor in internal medicine at the University of Michigan Medical School 1932-34; Assistant Professor of internal medicine and director of Rackham Arthritis Research Unit, University of Michigan Medical School, 1934-44; and associate professor of clinical medicine, Cornell Medical College; Director of the department of internal medicine, Hospital of

Special Surgery, New York City; Assistant attending physician, New York Hospital; and director of arthritis clinic, New York Hospital and Hospital of Special Surgery; since 1944 to date. Also, member of the Board of Directors; Executive Committee; and Medical and Scientific Committee, Arthritis and Rheumatism Foundation, 1949 to date; and member of the United States Public Health Service, Advisory Council of the National Institute of Arthritis and Metabolic Diseases, 1950 to date. Membership affiliations include Fellow, American Medical Association, New York Academy of Medicine, and American College of Physicians; Diplomate of American Board of Internal Medicine; Past President of the American Rheumatism Association; and member of the American Society for Clinical Investigation, Central Society for Clinical Research and New York Rheumatism Association.

SEMINAR IN OPHTHALMOLOGY AND OTOLARYNGOLOGY

THE ninth annual University of Florida Midwinter seminar in Ophthalmology and Otolaryngology will be held at the Sans Souic Hotel in Miami Beach the week of Jannary 17th, 1954. The lectures on Ophthalmology will be presented on January 17th, 18th, and 19th and those on Otolaryngology will be on January 20th, 21st, and 22nd. A midweek feature will be the Midwinter Convention of the Florida Society of Ophthalmology and Otolaryngology on Wednesday afternoon, January 19th, to which all registrants are invited. The registrants and their wives may also attend the informal banquet at 8 p.m. on Wednesday. The Seminar schedule permits ample time for recreation.

The Seminar lectures on Ophthalmology this year are: Dr. William F. Hughes, Jr., Chicago; Dr. Phillips Thygeson, San Jose; Dr. James Allen, New Orleans; Dr. Walter H. Fink, Minneapolis; and Dr. Milton L. Berliner, New York. Those lecturing on Otolaryngology are: Dr. Paul Holinger, Chicago; Dr. Lawrence R. Boies, Minneapolis; Dr. Edmund P. Fowler, Jr., New York; Dr. Arthur W. Proetz, St. Louis; and Dr. David D. DeWeese, Portland, Oregon.

Book REVIEWS

REVIEWS of the following books will be published in the near future.

LETS EAT RIGHT TO KEEP FIT by Adelle Davis, A.B., M.S., consulting nutritionist. Harcourt, Brace and Company. New York. 1954. Price $3.00.

HUGH ROY CULLEN, A Story of American Opportunity, by Ed Kilman and Theon Wright. Prentice-Hall, Inc. New York. 1954. Price $4.00.

THE CONCEPT OF SCHIZOPHRENIA by W. F. McAuley, M.D., Belf., D.P.M.R.C.P.S.I. Philosophical Library. New York. 1954. Price $6.00.

THE PHYSICIAN AND HIS PRACTICE by Eighteen Authorities, Edited by Joseph Garland, M.D. Little, Brown and Company. Boston. Toronto. 1954. Price $5.00.

FIFTY YEARS OF MEDICINE by Lord Horder, G.C.V.O., M.D., F.R.C.P. Philosopical Library, Inc. New York. 1954. Price $2.50. (Reviewed Dec., 1954).

PERIPHERAL CIRCULATION IN MAN, A Ciba Foundation Symposium, Edited by G. E. W. Wolstenholme, O.B.E., M.A., M.B., B.Ch., and Jessie S. Freeman M.B., B.S., D.P.H. Little, Brown and Company. Boston. 1954. Price $6.00.

BOOKS RECEIVED

"USES OF WINE IN MEDICAL PRACTICE." A summary published by Wine Advisory Board, San Francisco 3, California. Available to physicians on request to above address.

FIFTY YEARS OF MEDICINE – Lord Horder

THESE three lectures from the Harben Series of 1952 give us a superficial survey of the developments in medicine since the turn of the century. He encourages integration rather than a super specialization in medicine. Nutrition is considered "the most significant advance of all in the past century of scientific medicine". The National Health Service of England is severely criticized and by specific example is shown to have been a mistake. To quote, "I merely warn our American cousins (has one no duty to ones cousins?) against the blunders we had ourselves committed and against which I had animadverted consistently and persistently at home and for some years before the irrevocable step (National Health Service) was taken." Specific views are presented upon some of the new directions that medicine may or should take in Eugenics, Cremation, Noise Abatement, Biological Control, and finally in "the Disease of War". This is an interesting hours reading. Its broad presentation will permit one to profit from the fifty years experience of Lord Horder and may direct our eyes to some of the future aspects of medicine rather than to keep them in the limited valleys where so many of us specialize.

Darwin W. Neubauer, M.D.

MEDICAL ABSTRACT
TREATMENT OF WOUNDS INFLICTED BY RABID ANIMALS

THERE IS A known reluctance on the part of physicians to employ fuming nitric acid as a prophylaxis against rabies. The procedure is painful and destructive of tissue, it slows healing, it promotes bacterial infection, and it is not highly effective.

The authors have attempted, with animal studies, to simulate natural introduction of the virus by inoculation, and to determine effective means of preventing occurrence of the disease.

The experiments were conducted with a fixed rabies virus which was found to be consistent in causing the disease by intramuscular injection. Extensive ragged wounds were produced in skin and muscle tissue, and the virus was deposited in the wounds and then worked into the muscle tissues to simulate the bite of a rabid animal.

When fuming nitric acid was applied to the wounds, severe chemical burns and scarring occurred in about 90 per cent of the instances, with healing requiring approximately four weeks.

Other treatment methods were employed, and it was found that wounds treated with soap solution, tincture of iodine or Zephiran chloride healed in half the time, without excessive scarring. Zephiran 1% solution was for practical purposes as effective as the 4% solution, without corrosiveness.

The 1% solution of Zephiran chloride, applied with cotton swabs, was apparently more effective than fuming nitric acid or soap solution, was easier to apply, and did not tend to cause scarring or burns. From these studies, Zephiran chloride 1% solution emerged as the material of choice for the prophylactic treatment of wounds artificially contaminated with the virus of rabies.

It is emphasized by the authors that no treatment prevented all animals from developing the disease, that other approved prophylactics should be employed where indicated.

MEETING NOTICE

The eighteenth annual meeting of The New Orleans Graduate Medical Assembly will be held March 7-10, 1955, Headquarters at the Municipal Auditorium.

INTERNATIONAL ACADEMY OF PROCTOLOGY

PLAN now to attend the 7th Annual Convention of the International Academy of Proctology at the Plaza Hotel, New York City, March 23 to 26, 1955. The International, National, and Local Program Committees are planning an unusual seminar on anorectal and colon surgery. There will be special emphasis on anorectal presentations, and on panel discussions, as requested by those who attended the Chicago meeting in 1954.

Plans are being developed for wet clinics and lectures at the Jersey City Medical Center under the direction of Dr. Earl Halligan, surgeon-in-chief of the Medical Center.

Eminent speakers from all parts of the country and abroad will present interesting papers and motion picture demonstrations of their personal techniques. Mexico is expected to be very well represented at this meeting.

The delegates and trustees, and their wives, are cordially invited to cocktails and dinner on Tuesday evening, March 22, 1955, the evening before the official opening of the scientific activities of the convention. Both members and non-members of the Academy, and their wives, should plan to attend the Saturday night, March 26th banquet. The Banquet Committee promises the best cocktails and hors d'oeuvres in New York (prepared by the masters of The Plaza cuisine), and the finest dance music and entertainment for your pleasure.

The Women's Auxiliary has planned a very unusual program for the wives of the members and their guests.

Please remember that all physicians and their wives are cordially invited to attend the annual conventions of the International Academy of Proctology, whether or not they are affiliated with the Academy. There is no fee for attendance at these teaching sessions of the Academy.

ARIZONA SOCIETY OF MEDICAL TECHNOLOGISTS

Placement service for all physicians and hospitals requiring registered (ASCP) medical technologists.

Mrs. Marian Hannah, M.T. (ASCP)
Placement Director
507 Professional Building
Phoenix, Arizona

Notes from the EDITORS PEN

NO SPECIAL CLASS OF CITIZENS

In June, 1953, the House of Delegates of the AMA stated the medical profession's policy on VA hospital care, based on the fundamentally American idea that a man has **earned** federal medical care only if his illness is due to military services.

To those critical of such a policy who believe it is anti-veteran dreamed up for selfish reasons, let us quote from an address by Franklin D. Roosevelt before the House of Representatives, March 27, 1934:

> "The first principle, following inevitably from the obligation of citizens to bear arms, is that the Government has a responsibility for and toward those who suffered injury or contracted disease while serving in its defense. "The second principle is that no person, because he wore a uniform, must thereafter be placed in a special class of beneficiaries over and above all other citizens. The fact of wearing a uniform does not mean that he can demand and receive from his Government a benefit which no other citizen receives."

FEDERAL REINSURANCE

It is becoming more and more evident that the Administration through Secretary Hobby during the next Legislative Session will press for enactment of the federal reinsurance program defeated in the last Congress. Recently Mrs. Hobby stated: "* * * time is runing against those who seek to keep health insurance on a voluntary basis." She added: "We still strongly believe in a bill * * * which seeks to compress the experimentation of the next 20 years into less than half the time through the simple mechanism of a broad sharing of risks. We believe such a bill will * * * nurture rather than weaken the voluntary health insurance concept."

AMA opposition is based on the ground that (a) the insurance carriers themselves have all the reinsurance money needed, (b) voluntary health insurance is making "extremely rapid" progress without reinsurance, (c) reinsurance would not make uninsurable risks insurable, and (d) without an objectionable subsidy reinsurance would not reduce the cost of insurance or "overcome the inertia of the unwilling buyer."

GERMAN PHYSICIANS IN U. S. SUBJECT TO DOCTOR DRAFT

Physicians who are nationals of Germany and have been admitted to this country for permanent residence must now register under the Doctor Draft Act, those who had not yet reached their 50th birthday on January 15, 1951. No official estimate of the number of physicians, dentists or veterinarians affected is available, but it is certain to run into the thousands.

HISTORY IN THE MAKING

One important project, the development of which is long over-due, has been recognized by our President, Doctor Oscar W. Thoeny. The progress of medicine in our Great State can unfold a story of achievement exemplary throughout the Land, reflecting distinction throughout the membership of our profession, which should be documented. With the appointment of Doctor Robert S. Flinn and Doctor Howell S. Randolph to membership on the History and Obituaries Committee who have indicated an interest and willingness to undertake this project we may expect results and accomplishment.

PROOF POSITIVE OF MEDICAL PROGRESS

While all of us have read and heard much about the tuberculosis problem in Arizona, it is of interest to note that the Trudeau Sanatorium, the country's oldest private establishment, for the treatment of this disease, closed December first. This 100-acre Adirondack cottage community, a mile north of Saranac Lake, New York "will yield to scientific progress in the treatment and cure of the disease that spurred its founding 70 years ago," stated an article in the New York **Times.**

Doctor Gordon Meade, executive director, summed up the closing of the sanatorium in a few sentences: "This is a milestone. We can no longer continue because of the decline in the number of tuberculosis patients. A patient's length of stay has been shortened by the new antibiotic drugs and surgery techniques; there have been fewer relapses and lots more home care."

The tuberculosis mortality rate has been dropping steadily. In 1900 the death rate was 200 per 100,000 population; today it is only 12.6 per 100,000.

MARICOPA DIRECTORY SERVICE

After five years of arduous planning on the part of the Directory Committee of Maricopa County Medical Society, July 12, 1954 saw the opening of its telephone Directory Service. Six qualified operators under supervision is the only R.N. operated directory providing Direct Line service in the Maricopa area. Twenty-four hour service is available to both the public and medical doctors. It is reported that today the Society Directory is receiving an estimated 90% of the referral requests and emergency calls. In emergency calls, no longer is the anxious patient or relative or friend given

(Continued on the Next Page)

a list of doctors or numbers to call and then left to make out as best they can. The operators personally contact the doctor and ascertain if he will make the call, and if not then contact another. Just as soon as a doctor is located (and this takes but minutes) and is on his way to answer the "emergency", the operator immediately calls back the patient and gives him or her those words of reassurance: "Doctor ——— is on his way." The Number 1 public relations project of the AMA in Maricopa County is now a reality, and from all reports, its service is "making friends and winning patients". Congratulations Maricopa on a job well done.

REGIONAL CANCER HEAD

Ian Macdonald, M.D., of Los Angeles, was recently elected director of the American Cancer Society's Region 6 during the Society's annual meeting in New York City. Region 6 includes Arizona, California, Colorado, Nebraska, New Mexico and Utah. Many of you will remember Doctor Macdonald who participated as a guest orator during the Scientific Sessions of the 61st Annual Meeting of this Association held in Phoenix in 1952.

STATE HEADQUARTERS RELOCATED

For your information the headquarters of The Arizona Medical Association, Inc., has moved its offices to a new location, 411 Security Building, Phoenix, Arizona. We will appreciate it if you will note your records accordingly.

MID-WINTER RADIOLOGICAL CONFERENCE

The Seventh Annual Mid-Winter Radiological Conference, sponsored by the Los Angeles Radiological Society, will be held at the Ambassador Hotel in Los Angeles, California on Saturday and Sunday, February 26 and 27, 1955.

The following speakers will present papers on the subjects listed:

Prof. Olle Olsson, Lund, Sweden: 1. Renal Angiography; 2. Tolerance to Contrast Media.

Paul C. Hodges, M.D., Chicago, Illinois: 1. Neoplasms of Bone; 2. Fibrous Dysplasia of Bone.

Simeon Cantril, M.D., Seattle, Washington: 1. Hodgkins Disease; 2. Palliation and Care of Terminal Patients.

Leslie Bennett, M.D., Los Angeles, California: 1. Medical Isotopes.

George Jacobson, M.D., Los Angeles, Calif.: 1. Value of PA Chest Film in Cardiac Radiology.

Ross Golden, M.D., Los Angeles, California: 1. Tumors of the Small Intestine; 2. Physical Problems in Detection of Cancer of the Stomach.

Charles E. Grayson, M.D., Sacramento, Calif.: 1. The Pulmonary Cripple.

Informal round table luncheons with the guest speakers will be featured both days with the cost of the luncheons included in the Conference fee of $20.00. An additional charge of $6.50 per person will be made for the banquet on Saturday evening, February 26. Residents in radiology and radiologists in active military service will be admitted to the scientific sessions of the conference without payment of registration fee.

Conference reservations may be made through the chairman, Richard A. Kredel, M.D., 65 N. Madison Avenue, Pasadena, California. Please make checks payable to Mid-Winter Radiological Conference.

Hotel reservations should be made as soon as possible through the convention manager of the Ambassador Hotel.

———————

STANFORD SPRING POSTGRADUATE CONFERENCE IN OPHTHALMOLOGY

STANFORD University School of Medicine will present the annual postgraduate conference in Ophthalmology from March 21 through March 25, 1955. Registration will be open to physicians who limit their practice to the treatment of diseases of the eye; or eye, ear, nose and throat. In order to allow free discussion by members of the conference, registration will be limited to thirty physicians.

Instructors will be Dr. A. Edward Maumenee, Dr. Dohrmann K. Pischel, Dr. Jerome W. Bettman, Dr. Max Fine, Dr. Earle H. McBain, and Dr. Arthur J. Jampolsky.

Programs and further information may be obtained from the Office of the Dean, Stanford University School of Medicine, 2398 Sacramento Street, San Francisco 15, California.



PROGRAM THIRD ANNUAL CANCER SEMINAR

THE Arizona Division, American Cancer Society, in association with the Arizona Medical Association, announces the program of the Third Annual Cancer Seminar, Paradise Inn, Phoenix, Arizona, January 13th, 14th and 15th, 1955. Edward H. Bregman, M.D., Chairman, Mrs. Robert E. May, President.

January 13, 1955

CANCER OF THE GASTROINTESTINAL TRACT

9:30 A.M.

Gastric Ulcer or Gastric Ulcer The Physician's Dilemma:

George T. Pack, M.D., Surgeon, Memorial Hospital Group, New York City, N. Y.

The Radiologist's Diagnostic Criteria in Lesions of the Upper Gastrointestinal Tract:

Eugene P. Pendergrass, M.D., Professor of Radiology, University of Pennsylvania.

Premalignant Lesions of the Colon and Rectum. Their Diagnosis and Management:

Averill Liebow, M.D., Eugene P. Pendergrass, M.D., and Alexander Brunschwig, M.D.

The Rectal Sphincter Preservation Controversy:

George T. Pack, M.D.

2:00 P.M.

Problems in the Rehabilitation of the "ostomy patient":

George T. Pack, M.D.

Surgery of Hepatic Neoplasms:

Alexander Brunschwig, M.D., Professor, Clinical Surgery, Cornell University Med. School.

BONE TUMORS

3:00 P.M.

Symposium of the Diagnosis and Treatment of Tumors of Bone: Pathological, Radiological and Surgical Aspects:

Louis Lichtenstein, M.D., Leader Pathologist, V.A. Center, Los Angeles, California.

January 14, 1955

CANCER OF THE BREAST

9:30 A.M.

The Development of Present Day Treatment for Cancer of the Breast:

George T. Pack, M.D.; J. A. del Regato, M.D., Director of Penrose Cancer Institute, Colorado Springs, Colorado.

10:30 A.M.

Progress in Cancer Research:

Charles S. Cameron, M.D., Medical and Scientific Director American Cancer Society, New York City, New York.

CANCER OF THE FEMALE GENITAL TRACT

2:00 P.M.

The Role of Cytology in the Detection of Early Uterine Cancer:

Averill Liebow, M.D., Professor of Pathology Yale University.

Symposium: The Present Day Controversy in the Management of Uterine Cancer:

Eugene P. Pendergrass, M.D.; J. A. del Regato, M.D., Alexander Brunschwig, M.D.

Urinary Tract Complications of Radical Pelvic Surgery for Cancer:

Reed Nesbit, M.D., Professor of Urology, University of Michigan Medical School.

January 15, 1955

CANCER OF THE GENITOURINARY TRACT

9:30 A.M.

Testicular Tumors: Classification, Diagnosis, and Management:

Averill A. Liebow, M.D., Victor F. Marshall, M.D., Professor of Clinical Surgery (Urology) Cornell & Memorial Hospital, New York City.

End Results in Treatment of Prostatic Cancer:

Reed Nesbit, M.D.; Victor F. Marshall, M.D.

The Differential Diagnosis of Hematuria:

Victor F. Marshall, M.D.

The Clinical Behavior and Curability of Bladder Cancer:

Reed Nesbit, M.D.; Victor F. Marshall, M.D.

SPEAKERS

ALEXANDER BRUNSCHWIG, M.D.
Professor, Clinical Surgery
Cornell University Medical School
Att. Surgeon, Memorial Hospital
New York City

CHARLES S. CAMERON, M.D.
Medical & Scientific Director
American Cancer Society
New York City

J. A. del REGATO, M.D.
Professor of Radiology
University of Colorado School of Medicine
Director, Penrose Cancer Institute
Colorado Springs, Colorado

LOUIS LICHTENSTEIN, M.D.
Pathologist, Veterans Administration Center
Consulting Pathologist, L. A. County Hospital
Los Angeles, California

AVERILL LIEBOW, M.D.
Professor of Pathology
Yale University School of Medicine
New Haven, Connecticut

VICTOR F. MARSHALL, M.D.
Professor of Clinical Surgery (Urology)
Cornell University Medical School
Director, Department of Urology
N. Y. Hospital, Cornell Medical Center
New York City

REED NESBIT, M. D.
Professor of Urology
University of Michigan Medical School
Ann Arbor, Michigan

GEORGE T. PACK, M.D.
Clinical Professor of Surgery
New York College of Medicine
Attending Surgeon in Chief
Gastric & Mixed Services
Memorial Hospital, New York City

EUGENE P. PENDERGRASS, M.D.
Professor of Radiology
University of Pennsylvania Medical School
Philadelphia, Pennsylvania

CHAIRMEN AND MODERATORS

Thomas H. Bate, M. D.
Surgeon, Phoenix
Edward H. Bregman, M. D.
Radiologist, Phoenix
W. Albert Brewer, M. D.
Surgeon, Phoenix
Robert H. Cummings, M. D.
Urologist, Phoenix
Francis M. Findlay, M. D.
Physician, Kingman
R. E. Hastings, M. D.
Orthopedic Surgeon, Tucson
David C. James, M. D.
Gynecologist, Phoenix
Paul B. Jarrett, M. D.
Surgeon, Phoenix
J. Lytton-Smith, M. D.
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W. R. Manning, M. D.
Surgeon, Tucson
D. W. Melick, M. D.
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Gynecologist, Phoenix
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Surgeon, Phoenix
Donald A. Polson, M. D.
Surgeon, Phoenix
W. G. Shultz, M. D.
Urologist, Tucson
Paul L. Singer, M. D.
Urologist, Phoenix
Charles Van Epps, M. D.
Gynecologist, Phoenix
George A. Williamson, M. D.
Orthopedic Surgeon, Phoenix

Programs and registration blanks are now available at the Arizona Division, American Cancer Society, office, 1429 North 1st Street, Phoenix, Arizona.

PHOENIX INSTITUTE OF NEUROLOGY & PSYCHIATRY

The Phoenix Institute of Neurology & Psychiatry is conducting a research project on Amyotrophic Lateral Sclerosis.

Initial studies indicate the possibility of a vascular disturbance in the affected areas of the medulla oblongata, due to compression of the vertebral arteries by proliferative changes in one or several cervical vertebrae. We are greatly interested in obtaining films of the cervical spine in patients suffering from amyotrophic lateral sclerosis, especially in regards to the course of the vertebral artery.

Any patients referred to the Institute for this research project will be examined free of charge upon the request of the referring physician.

The cooperation of any physician who has patients with amyotrophic lateral sclerosis under his care would be greatly appreciated.

Otto L. Bendheim, M.D.

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ARIZONA *Pharmaceutical* PAGE

STANDARDS — THE BACKBONE OF MEDICINE

By Joseph A. Zapotocky, Ph.D.
College of Pharmacy, University of Arizona

VERY often, those who reap the greatest benefit from a situation, take it the most for granted. The *United States Pharmacopeia* and *The National Formulary* are of invaluable assistance to both physicians and pharmacists. Much of the progress made by both of our professions is due, in part, to these standards; yet the significance of these two great works is often completely lost. Both compendia present us with lists of products which have been standardized as to purity, strength and nomenclature. Each monography completely identifies a product which is therapeutically acceptable by physicians, pharmacists and other professional groups. The U.S.P. or N.F. product name always identifies a substance which will have the same properties and strength and which can be relied upon to give uniform therapeutic results.

The first U. S. Pharmacopoeia was prepared in 1820 by a group of physicians who represented various medical societies and medical colleges of the nation. This work was prepared specifically for physicians to represent the latest therapeutic agents of the period. Revisions were prepared every decade by a Committee of Revision. This group gradually expanded to include both physicians and pharmacists who represented medical and pharmaceutical societies and colleges of medicine and pharmacy, and later was to include representatives of various government services and representatives of scientific societies.

In the late 1880's the manufacturing of medicinals had become a sizeable industry in the United States. Each manufacturer tried to make his product distinct by modifying a formula slightly, especially in regard to non-essential components. This resulted in a great deal of confusion with products bearing the same name but having different characteristics. A group of pharmacists prepared a formulary for use by pharmacists for the purpose of standardizing the many unofficial preparations commonly prescribed by physicians. These products varied slightly from manufacturer to manufacturer and both the physician and pharmacist had quite a task keeping them straight. The American Pharmaceutical Association published this work under the title, *The National Formulary of Unofficial Preparations.*

In 1906, both the Pharmacopoeia and Formulary were established as legal standards for our professions and the name of the latter was changed to *The National Formulary* to show its change from unofficial to official status. Although the scope of both works was different at the outset, they have become alike through necessity. To keep pace with the more rapid progress made in medicine, revisions of both publications are made more frequently now.

Most major countries throughout the world have seen fit to prepare pharmacopoeias. However, the U.S.P. and the N.F. of this country differ from others in that they are prepared by members of the two professions rather than by government groups.

Both standards guarantee physicians, pharmacists and the public that a substance labeled as a U.S.P. or N.F. product is of standard quality, purity and strength. It prevents the sale of adulterated or falsified drugs and prevents a manufacturer from misrepresenting a drug under a title which would lead to mistaken ideas about its composition. Drugs of proven value and proven identity should be our first choice from among the thousands of drugs now available.

Organization Page

CIVICS

Norman A. Ross, M.D., Phoenix, Arizona

ARIZONA TUBERCULOSIS & HEALTH ASSOCIATION, 111 East Willetta, Phoenix, Ariz.



More research in the baffling problems of Tuberculosis Control will be possible under the program of the National Tuberculosis Association and its 3000 local and state affiliates if more people buy and use Christmas Seals.

According to the Arizona Tuberculosis and Health Association the casual observer views the marked drop in the death rate from tuberculosis, the advent of the miracle drugs, the antibiotics, the increasing importance of surgery with an unwarranted complacency that TUBERCULOSIS is no longer a problem — Would that it were true!

No one better than the physician practicing medicine in Arizona knows the fallacy of this attitude — in a state where, percentage-wise, more tuberculosis is being uncovered than elsewhere in the United States.

Lacking the proven means of Tuberculosis Control at the state level — enforceable public health laws, tuberculosis isolation facilities, adequate diagnostic and treatment facilities for Tuberculosis, a functioning program for total rehabilitation — there is a challenge confronting the professional and lay citizens of this state.

You can help: (1) Support your local tuberculosis association's educational program. (2) Buy and USE Christmas Seals.

* * *

UNITED CEREBRAL PALSY ASSOCIATION OF CENTRAL ARIZONA, INC., 106 North Central Avenue, Phoenix, Arizona.

A new booklet — A Syllabus of Cerebral Palsy Treatment Techniques, published by Marguerite Abbott, who is an instructor, College of Physicians and Surgeons, Columbia University — is available at the local Cerebral Palsy office without charge to doctors who will request the same.

Over 75 copies of Cyril Courville's "CEREBRAL PALSY" have been distributed to requesting professional and lay persons by the United Cerebral Palsy Association.

The United Cerebral Palsy Association of Central Arizona and Arizona concluded a series of five two-hour lectures on the major aspects of Cerebral Palsy and its problems in Phoenix. Discussions covered medical, psychological, educational, vocational, recreational, and community phases of the total problem. Meetings were attended by representatives of public health, professional, educational, vocational and lay groups as well as parents of victims. Success was such that program expansion statewide is developing.

* * *

MARICOPA COUNTY CHAPTER, MUSCULAR DYSTROPHY ASSOCIATION OF AMERICA, INC., 4431 N. 7th Avenue, Phoenix, Ariz.

Plans for the 1954 Muscular Dystrophy Campaign will be fully underway the latter part of November. The National Association of Fire Chiefs are supporting the 1954 campaign. This organization in Phoenix, together with the Firemen and Firefighters, are wholeheartedly behind the cause. Last year it was the Letter Carriers' March.

If public and medical interest so continues, it can be hoped that a cure for Muscular Dystrophy can be found — not in the far distant future — but within a few years. The slogan, "Hope for the Hopeless can be realized.

* * *

THE NATIONAL FOUNDATION FOR INFANTILE PARALYSIS, 120 Broadway, New York 5, N. Y.

A release from the National Foundation for Infantile Paralysis under date of October 12, 1954, and entitled "Report to Physicians: Polio Vaccine", details the accepted procedure for proving a prophylactic agent.

The vaccine of Dr. Jonas E. Salk offers such possibilities that the National Foundation has taken a calculated financial risk. It has placed orders with six pharmaceutical manufacturers for 25,000,000 cc's of "Salk Vaccine". The 25,-

000,000 cc's with the 2,000,000 cc's now on hand will be enough for 9,000,000 doses of three shots each. This will be ample for immediate use in highly susceptible groups.

The Foundation feels that the 1,400,000 children of the now upper grades who participated in the program voluntarily should have first call on the vaccine; that secondly the 4,825,000 children in the first grade next spring should receive prophylactic treatment; and that thirdly, pregnant women who meet certain criteria should be immunized.

It is most interesting to note that in the United States next year, there will be 4,825,000 children in the first grade. This group, of course, is the most highly susceptible and readily available age group. These children rightfully have claim on any available licensed vaccine and such vaccine must be at hand the moment its effectiveness is proven.

It is intended that the National Foundation's purchases may enable pharmaceutical manufacturers to process additional quantities for sale through the usual channels when and if the product is licensed by the National Institute of Health. The licensed vaccine will in the future be manufactured and distributed in the same manner as any other biological product. The National Foundation does not intend to purchase additional supplies of the vaccine nor to participate in further distribution of the vaccine once its outlined polio prevention program for 1955 is launched.

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RECENT TECHNICAL ADVANCES, ***a 2 minute Abstract***

GRID RADIATION THERAPY

The rationale for the use of radiation therapy in the cure of cancer is evidence that there is an optimum cancericidal dose which will be effective if the surrounding tissues are not also injured excessively. There are several alternatives which may be used to limit the injury to normal tissues including multiple individual ports or contnuous rotation, higher energy gamma and beta rays as well as neutrons. An extention of the conventional multiple port therapy is the use of a perforated lead-rubber grid which, in effect, is treatment through a large number of very small portals. The protected intervening tissue is able to exert a maximal protective role. Although the depth dose percentage-wise is smaller than with conventional therapy, the skin tolerance to doses which, under exceptional circumstances, may be as high as 24,000 r given by fractionation, permits adequate tumor doses.

The Diagnostic Laboratory

1130 E. McDowell Road Phoenix, Arizona Phone AL 8-1601

Maurice Rosenthal, M.D.
George Scharf, M.D.

Marcy L. Sussman, M.D.
Seymour B. Silverman, M.D.

Interesting TOPICS

RECOMMENDED READING IN CURRENT MEDICAL JOURNALS

FOOD RATIONING IN ENGLAND — Many of us, in the last few years, as we sat at breakfast crabbing about the quality of our orange juice or grapefruit, or demanding four pats of butter on our hotcakes, may have felt a passing qualm of sympathy for the unfortunate British who were denied these "necessities" of life in their rationing system. An editorial in British Medical Journal of July 3, 1954, comments on The End of Rationing and reviews the effects of those stringent years on the health and physical well being of the citizens of Great Britain. The closing paragraph, comments on the beneficial effect of this rationing in these words:

"Altogether it has been a hectic but creditable chapter of British history. A population comes out of it with health unimpaired, and perhaps with better food habits, having learned something of food values of which it had known little before, and that efficiency in labor and joy in living are not necessarily imperilled by a tightened belt."

RADIATION THERAPY AND GENERAL PRACTICE. An article by David S. Carroll, Memphis, Tenn., in the July, 1954 issue of the Journ. of the Med. Assn. of the State of Alabama, sets forth some of the conditions usually first seen by doctors in general practice and which are amendable to radiation therapy. Cancer of course is the most important condition and the general practitioner usually can only decide whether to refer the patient to a surgeon or a radiologist. Skin diseases make up a second large group. Then the author discusses briefly hypertrophy of lymphoid tissue of the nasopharynx; nontuberculous cervical adenitis; uterine fibromata where hysterectomy is not deemed advisable; subacute thyroiditis; tenosynovitid and bursitis; Marie-Strumpell disease of the spine; cellulitis; carbuncles; herpes zoster; inflammatory diseases in general.

EARLY CHOLECYSTECTOMY IN ACUTE CHOLECYSTITIS. Williams and Cline, in South Dakota Journ. of Med. & Pharmacy, July, 1954, report on 29 cases of uncomplicated acute cholecystitis treated by early cholecystectomy, and advocate this as treatment of choice in such cases.

JOINT MANIFESTATIONS IN COLLAGEN DISEASES AND RHEUMATIC DISEASES. Irving L. Sperling, Newark, N. J., writes on this subject in The Journ. of the Med. Soc. of N. J., June, 1954. The collagen diseases he describes and discusses include periarteritis nodosa, disseminated lupus erythematosus, scleroderma, darmatomyositis, rheumatic fever, rheumatoid arthritis.

TRAUMATIC CANCER. Ellenbogen, in The Journ. of the Med. Soc. of N. J., June, 1954. Cancer as the result of a single trauma is rare, but well authenticated cases have been reported. Segond's postulates have been accepted widely by courts and by oncologists. They are (1) The authenticity of trauma to the part must be established definitely. (2) The trauma must be a significant one. (3) There must be reasonable evidence of the integrity of the part prior to the injury. (4) The site of the tumor must correspond to the site of the injury. (5) The date of the appearance of the tumor must not be too remote from the time of the accident to be associated reasonably with it. (6) The diagnosis of the tumor must be established by clinical roentgen, and whenever possible, microscopic evidence.

ANTIBIOTICS, Warnings: — Every notable advance in medicine is likely to bring a train of ill consequences. This is true of the widespread use of antibiotics. Two articles and a case report in the July, 1954 issue of California Medicine emphasize these. Dr. Lowell A. Rantz of San Francisco, writes on "Consequences of the Widespread Use of Antibiotics"; he discusses superinfection by bacteria resistant to the antibiotic being administered; there are a large number of these and the control of such resistant infections requires the development of new antimicrobial agents and new knowledge about the use of older ones in combination. Drs. Farber, Ross and Stephens of Oakland discuss "Antibiotic Anaphylaxis", and Drs. Brainerd Uyeyama and Erickson of San Francisco report a case of severe anaphylacyic shock due to penicillin O in a patient previously sensitized to penicillin G. Drs. Farber, Ross and Stephens circularized 1000 California physicians and secured reports on 300 patients who had had severe anaphylactic reactions from parenteral penicillin and streptomycin.

THE MALE CLIMACTETIC. British Med. Jour., June 12, 1954. An interesting discussion of this much disputed subject appears in this journal by Dr. A. W. Spence. He accepts the male climacteric as a definite condition.

HYPERCHROMIC ANEMIAS. The laboratory investigation of these conditions is discussed by John F. Wilkinson, in the section on Clinical Pathology in General Practice, British Medical Journ., June 12, 1954. While most often seen as pernicious anemia, hyperchromic macrocytic anemia may occur in a number of less common conditions; these conditions cause difficulty in diagnosis but a correct diagnosis is important, since they often require different types of treatment.

CHEMOTHERAPY OF INFECTIOUS DISEASES. A timely article by William H. Feldman, of

(Continued on Page 478)

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(Continued from Page 476)

the Section on Pathology, Mayo Clinic, in Diseases of the Chest, July, 1954. He discusses the development of chemotherapy, the values, misuse and hazards. He lists in table form the currently used sulfonimides and other synthetic antimicrobial agents, with their possible toxic effects. Likewise the currently important medicinal antibiotics, with their indications and possible toxic effects. In using such remedies there must be a constant awareness of untoward effects. "A small but definite risk should be recognized and a compromise attained between the good that may be accomplished and the possibility, even remote, that undesirable effects of variable degrees of seriousness may ensue."

ENDOMYOCARDIAL FIBROELASTOSIS. Halliday, in Diseases of the Chest, July, 1954. An interesting discussion of this condition which the author says is "not infrequent". He reports in some detail on thirty cases, one of whom survived twenty years.

THE DYNAMICS OF HEMOPOIESIS. British Med. Journ., June 5 1954. The Thomas Huxley Lecture by Sir Lionel Whitby, Regius Prof. of Physics at Univ. of Cambridge. This scholarly lecture is well worthy of substitution in place of an hour TV relaxation watching your favorite baseball team getting clobbered. Try it.

Opening sentence:—"Even the most casual surof the activities of the haemopoietic system, which has to maintain a constant population of erythrocytes, leucocytes, platelets, and other factors in the face of losses caused by daily wear and tear, can leave no doubt that the system is highly dynamic."

GENERAL PRACTICE IN AMERICA AND GREAT BRITAIN. Charles M. Fleming, British Medical Journal, June 19, 1954. Many articles have been written by American physicians, after visiting England, about the practice of medicine in that country. Here is a very frank and interesting analysis of general practice in the United States Charles M. Fleming, Principal Medical Officer Department of Health for Scotland. One point which struck him forcibly was the equipment and office space which even the general practitioner in a small community felt necessary to carry on his work efficiently, so that he felt that the present-day needs in British general practice were, (1) adequate time to do his work efficiently; (2) facilities to practice medicine the way he had been taught; (3) some useful form of attachment to a hospital; (4) regular and appropriate postgraduate training. In all these respects he found the practitioners in the United States to be in better position than our British conferers.

MEDICAL PROBLEMS, Unsolved and New. Texas State Journ. of Med., June, 1954. This is the presidential address to the Texas State Medical Association, at San Antonio, May 3, 1954, by our good friend, George Turner, of El Paso, Texas. The problems he discussed included: 1) Veterans' Medical Care, and especially the medical care of veterans with nonservice connected disabilities; (2) health insurance and the proposed government subsidy; (3) education by television in county medical societies; (4) nurse recruitment and the work of the Woman's Auxiliary; (5) physician-hospital association and the practice of medicine by hospitals; (6) osteopathy and the question of relationship between medicine and osteopathy; (7) public health services. Each of these problems is discussed tersely and pointedly. Well worth reading.

ANESTHESIOLOGY. The New England Journ. of Med., June 24, 1954. This is the second of two articles on Medical Progress, being a review by Papper and Ngai, of the Anesthesia Service of Presbyterian Hospital and Columbia University College of Med. and Surg. Somehow, the first article was missed. These reviewers covered 236 reference articles, list of which is appended to the concluding article above mentioned. Their summary is interesting:

"Developmental advances in anesthesiology during the last decade are outlined largely in the direction of studies designed to elucidate basic mechanisms of the anestheyized state. Progress in understanding the physiologic derangements occurring during anesthesia has been made. It appears noteworthy, as a sign of the interests in this field, that work in the development of new drugs has not been so important as the efforts to understand the old ones more completely."

In other words it takes a thoroughly educated doctor of medicine, rather than a highly skilled technician, to make the best anesthesiologist.

CANCER OF THE LUNG. Ochsner, Ray and Acree, The Journ. of the La. State Med. Soc., July, 1954. Any article by Ochsner makes interesting and lively reading, and particularly one on cancer of the lung. With Graham and certain English writers, he is an outspoken protagonist of the idea (or fact) that cigarette smoking is the main cause for the marked increase in the incidence of lung cancer. In 1920 cancer of the lung represented 1.1 per cent of all cancers; in 1948 it was 8.8 per cent; Ochsner predicts that by 1970 cancer of the lung will represent 18 per cent of all cancers. By that date, unless something is done to prevent it, one in every 10 or 15 men living will have cancer of the lung. Fifteen years ago the peak incidence was about at age 65; today it is at 55. While there is lack of complete unanimity concerning the cause of this unprecendented increase in lung cancer, these authors are convinced from their observations that it is due to the carcinogenic effect of cigarette smoke. The article discusses the symptoms, diagnosis. treatment and survival rates. Good readers except a little disquieting for cigarette smokers!

Woman's AUXILIARY

OUR STUDENT NURSE LOAN FUND

Mrs. Donald A. Polson, Student Loan Fund Chm.
Phoenix, Arizona

THIS is to introduce some of the women who have utilized the Student Nurse Loan Fund. They are fine girls with high standards and a great sense of responsibility. This is demonstrated by the fact that they have established a career on their own which in itself gives a sense of achievement, and also in the fact that repaying their loans they make available funds which will assist other future nurses to realize a similar ambition. Unfortunately it is not possible to present photographs of all our graduate nurses — space will not permit. The pictures below show two registered nurses who are representative of those having used the Loan Fund. The three group pictures show the young women who are in the various Schools of Nursing at this time.



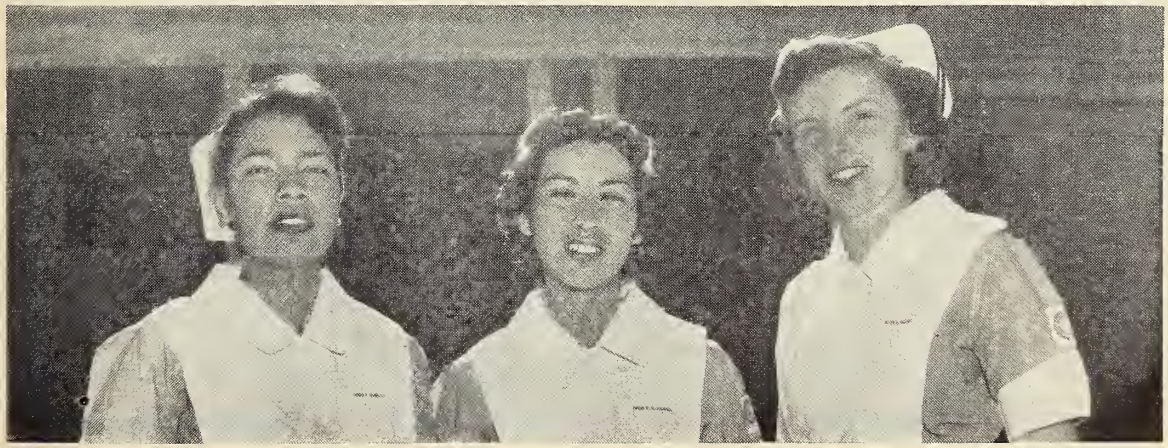
Mary Gustafson was one of the first to utilize our Student Nurse Loan. She graduated in '53 from St. Mary's School of Nursing in Tucson. She has a position at the Pima County Hospital. To quote a letter received recently from Mrs. Donald B. Lewis, Tucson: Mary is very enthusiastic about her work. She radiates with personality and is doing a superb job at the County Hospital.



LaVerne Timeche graduated in 1954 from Good Samaritan Hospital. According to the people that know, she is indeed a valuable asset. She worked at Ganado Hospital with the U. S. Public Health Service in the Cancer Program instigated this summer on the Indian Reservation. To quote a letter received from her lately, she says, "After I graduated, I obtained employment with the U. S. Government. My request was to work with the Indians of the Navajo Tribe. The Window Rock office appointed me to a position at the Western Navajo Hospital at Tuba City, Arizona. I like my work very much and I will hate to leave when I plan to resume my schooling, but I think I can help my people more by entering the public health field, and that is what I want to do most".

The records of all these students are excellent.

GOOD SAMARITAN HOSPITAL, PHOENIX, ARIZONA



These are the girls at the Good Samaritan Hospital School of Nursing, Phoenix. Left to Right; Eleanor Garcia; Belen Alvidrez and Nancy Wilcox.

To date 22 women have used the Student Nurse Loan Fund and the amount of mony circulating is $5,750.00. These girls have come from many parts of the state: Clifton, Douglas, Kingman, Laveen, Miami, Morenci, Nogales, Phoenix, Prescott and Tucson.

ST. JOSEPH'S HOSPITAL, PHOENIX, ARIZONA



These girls are in St. Joseph's School of Nursing in Phoenix. Left to Right: Myra Higgins; Lois Ann Enos; Lydia Zuniga; and another student Cecelia Chavez is on psychiatric affiliation in Albuquerque, New Mexico so she was not available for the picture. Lois Ann, Lydia and Myra are in their first year. Cecelia graduates in 1955.

ST. MARY'S HOSPITAL, TUCSON, ARIZONA



These are the nurses in school at St. Mary's School of Nursing. From Left to Right: Collen Horner; Cecilia Fuentes; Sylvia Espinoza and Frances Zappia.

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